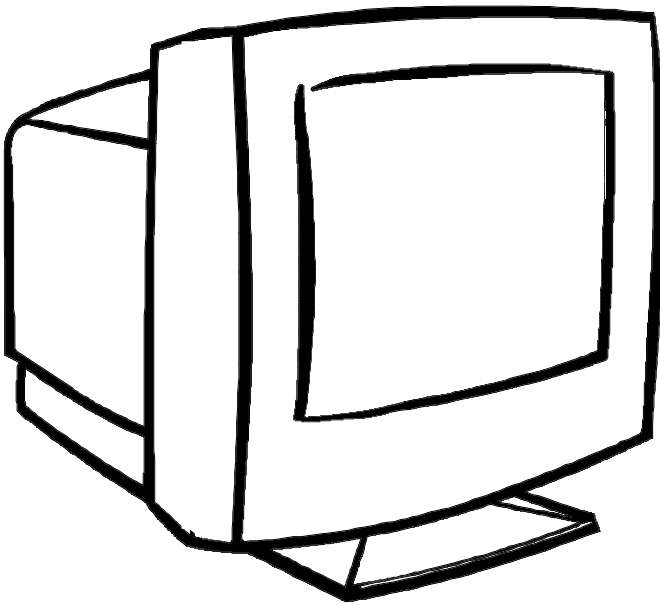


SERVICE MANUAL

COLOR MONITOR

SPECTRUM 4V SERIES
(D356P/PA)



AOC

41A50-087

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1. SPECIFICATIONS FOR D356P COLOR MONITOR

1. CRT
35.5CM(14V) 90 Deflection, 29mm Neck, 0.28mm Dot Pitch, Non-Glare Screen
2. Viewable image Size: 33.5CM (13") diagonal
3. Display Color: Unlimited Colors
4. External Controls:
Power On/Off, UP/Down key, Function key: Contrast, Brightness, H-Size, H-center, V-Size, V-Center, Pincushion, Trapezoid, volume (for 4VA/4VnA/4VlrA only)
5. Input Video Signal

	Mode 1	Mode 2	Mode 3	Mode 4	Mode 5	Mode 6	Mode 7
	RGB Analog	RGB Analog	RGB Analog	RGB Analog	RGB Analog	RGB Analog	RGB Analog
Horiz. Sync:	TTL Level	TTL Level	TTL Level	TTL Level	TTL Level	TTL Level	TTL Level
	Negative	Negative	Negative	Negative	Positive	Positive	Negative
Vert. Sync:	TTL Level	TTL Level	TTL Level	TTL Level	TTL Level	TTL Level	TTL Level
	Positive	Negative	Negative	Negative	Positive	Positive	Negative

6. Resolution

Horizontal:	720 (H)	640 (H)	640 (H)	640 (H)	800 (H)	800 (H)	1024 (H)
Vertical :	400 (V)	480 (V)	480 (V)	480(V)	600(V)	600 (V)	768 (V)
Fh (KHz):	31.5	31.5	37.5	43.3	46.8	53.7	48.4
Fv (Hz) :	70	60	75	85	75	85	60
7. Display Size

Horizontal:	250 mm
Vertical:	187 mm
8. Scanning Frequencies

Horizontal:	30KHz ~ 54KHz
Vertical:	50 Hz ~ 120 Hz
9. Factory Preset Timings: 7
User Timings: 12
10. Misconvergence

Center:	0.3 mm Max.
Corner:	0.4 mm Max.
11. Video Bandwidth: 85 MHz
12. Power Source:
Switching Mode Power Supply
AC 100 ~240V, 50/60Hz Universal Type
13. Operating Temperature: 0℃ to 40℃ Ambient

- 14. Humidity:
10% to 85% Relative, Non-Condensing
- 15. Weight: 11Kgs(Net), 12.8Kgs(Gross)
- 16. Dimensions Monitor:
Carton: 438(W) × 394(H) × 460(D) mm
Monitor: 350(W) × 352(H) × 370(D) mm
- 17. External Connection:
15 Pin D-type Connector
AC Power Cord
- 18. Speaker: (for 4VA/4VnA/4VlrA only)
Rate power: 1W (per channel)
Impedance: 16Ω
- 19. Regulations: UL, CSA, DHHS, FCC-B, TÜV/GS, CE
TÜV/MPR-II (for 4Vlr/4VlrA only)

2. PRECAUTIONS AND NOTICES

2-1 SAFETY PRECAUTIONS

1. Observe all caution and safety related notes located inside the display cabinet.
2. Operation of the display with the cover removed, may cause a serious shock hazard from the display power supply. Work on the display should not be attempted by anyone who is not thoroughly familiar with precautions necessary when working on high voltage equipment.
3. Do not install, remove or handle the picture tube in any manner unless shatterproof goggles are worn. People who are not so equipped should be kept away while handling picture tube. Keep picture tube away from the body while handling.
4. The picture tube is constructed to limit X-RAY radiation to 0.5 mR/HR. For continued protection, use the designated replacement tube only, and adjust the voltages so that the designated maximum rating at the anode will not be exceeded.
5. Before returning a serviced display to the customer, a thorough safety test must be performed to verify that the display is safe to operate without danger or shock. Always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as screw heads.
Test method for current leakage is described as follow.
 - (a) Plug the AC line cord directly into rated AC outlet (do not use a line isolation transformer during this check).
 - (b) Use an AC voltmeter having 5000 ohms per volt or with more sensitivity in the following manner: Connect a 1500 ohms 10 Watt resistor, paralleled by a 0.15UF, AC type capacitor between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts simultaneously. Measure the AC voltage across the combination of 1500 ohms resistor and 0.15UF capacitor.
 - (c) Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part.
 - (d) Voltage measured must not exceed 0.5 volts RMS. This corresponds to 0.35 milliamp AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

2-2 PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety visual inspections and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Before replacing any of these components read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-RAY radiation or other hazards.

2-3 SERVICE NOTES

1. When replacing parts or circuit boards, clamp the lead wires around terminals before soldering.
2. When replacing a high wattage resistor (more than 1/2W of metal oxide film resistor) in circuit board, keep the resistor about 10mm (1/2 in) away from circuit board.
3. Keep wires away from high voltage or high temperature components.
4. Keep wires in their original position so as to reduce interference.

2-4 HIGH VOLTAGE WARNING

Operation of monitor outside of cabinet or with back removed may cause a serious shock hazard. Work on this model should only be performed by those who are thoroughly familiar with precautions necessary when working on high voltage equipment.

Exercise care when servicing this chassis with power applied. Many B plus and high voltage terminals are exposed which, if carelessly contacted, can cause serious shock or result in damage to the chassis. Maintain interconnecting ground lead connections between chassis and picture tube dag when operating chassis.

Certain HV failures can increase X-ray radiation. Monitor should not be operated with HV levels exceeding the specified rating for the chassis type. The maximum operating HV specified for the chassis used in this monitor is

$$24.5KV \pm 1KV$$

With a line voltage of 120/240 VAC. Higher voltage may also increase possibility of failure in HV supply.

It is important to maintain specified values of all components in the horizontal and high voltage circuits and anywhere else in the monitor that could cause a rise in high voltage or operating supply voltages. No changes should be made to the original design of the monitor. Components shown in the shaded areas on the schematic should be replaced with exact factory replacement parts. The use of unauthorized substitute parts may create a shock, fire or other hazard.

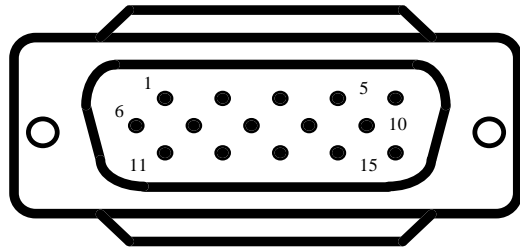
To determine the presence of high voltage, use an accurate, high impedance, HV meter connected between second anode lead and CRT dag grounding device. When servicing the High Voltage System, remove static charge from it by connecting a 10K ohm resistor in series with an insulated wire (such as a test probe) between picture tube dag and 2nd anode lead.(AC line cord disconnected from AC power outlet.)

The picture tube used in this monitor employs integral implosion protection. Replace with tube of the same type number for continue safety. Do not lift picture tube by the neck. Handle the picture tube only after discharging the high voltage completely.

3. OPERATING INSTRUCTIONS

This procedure gives you instructions for installing and using the 4V Series display.

1. Position the display on the desired operation and plug the power cord into a convenient AC outlet. Three-wire power cord must be shielded and is provided as a safety precaution as it connects the chassis and cabinet to the electrical conduit ground. If the AC outlet in your location does not have provisions for the grounded type plug, the installer should attach the proper adapter to ensure a safe ground potential.
2. Connect the 15-pin color display shielded signal cable to your signal system device and lock both screws on the connector to ensure firm grounding. The connector information is as follow:



15 - Pin Color Display
Signal Cable

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1.	RED	9.	NC
2.	GREEN	10.	GND
3.	BLUE	11.	SYNC. GND
4.	GND	12.	SDA
5.	GND	13.	HORIZ. SYNC
6.	GND-R	14.	VERT. SYNC (*VCLK)
7.	GND-G	15.	SCL
8.	GND-B		

3. Apply power to the display by turning the power switch to the "ON" position and allow about thirty seconds for display tube warm-up. The Power-On indicator lights when the display is on.
4. With proper signals feed to the display, a pattern or data should appear on the screen, adjust the brightness and contrast to the most pleasing display.
5. This monitor has power saving function following the VESA DPMS. Be sure to connect the signal cable to the PC.
6. If your 4V Series color display requires service, it must be returned with the power cord.

4. ADJUSTMENT

4-1 ADJUSTMENT CONDITIONS AND PRECAUTIONS

1. Approximately 30 minutes should be allowed for warm up before proceeding.
2. Adjustments should be undertaken only on those necessary elements since most of them have been carefully preset at the factory.

4-2 MAIN ADJUSTMENTS

NO.	FUNCTION	LOCATION	DESIGNATION
1.	15V ADJ	PCB - MAIN	VR901
2.	B + ADJ	PCB - MAIN	VR902
3.	R.B. DRIVE	CRT - BOARD	VR801,802
4.	R.G.B. CUT-OFF	CRT - BOARD	VR803,804,805
5.	ABL ADJ	PCB - MAIN	VR701
6.	UP KEY	PCB - MAIN	SW101
7.	DOWN KEY	PCB - MAIN	SW102
8.	FUNCTION KEY	PCB - MAIN	SW103

4-3 ADJUSTMENT METHOD

1. 15V, B + & HV protection voltage adjustment:
 - A. Chroma-2000 Signal generator or PC equivalent, set mode 1(VGA 640× 480) pattern 1.
 - B. Connect a DC voltage meter between TP 901 and ground, then adjust VR901 to be 15VDC.
 - C. Connect a DC voltage meter between TP 902 and ground, then adjust VR902 to be 90 VDC.
2. Factory preset timings adjustment:
 - A. When you turn on the monitor, the function LEDS will light up simultaneously for a while, then extinguish.
 - B. You can press the up/func two keys simultaneously, the most left four LEDS will light up for a while then extinguish.
 - C. Then you can select one of the eight functions including Contrast, Brightness, H-SIZE, H-CENTER, V-SIZE, V-CENTER, Pincushion and Trapezoid Simply press the function key and the LED will be light up corresponding to the one selected, then press the up/down keys to get the factory presetting parameter value to your satisfaction.
 - D. Then you will press the up/function two keys simultaneously again, the most right four LEDS will light up for a while then extinguish, the factory preset timings adjustment is finished.
3. White balance and luminance adjustment:
 - A. Bias (low light) adjustment:
 - (a) Set mode 5 (800× 600 Fh: 46.8KHz) full white pattern.
 - (b) Adjust VR801, 802, 803, 804, 805, to make VR in the center position.
 - (c) Warm up more than 20 minute.
 - (d) Brightness set to max. Contrast set to min. full white pattern, then adjust FBT screen VR to make $Y=1.0FL \pm 0.2FL$
 - (e) Brightness set to raster just cutoff, contrast set to 4FL, then adjust CRT board VR805 (B-Bias) VR803 (R-Bias) to make $Y=4 \pm 0.2 FL$, $x=281 \pm 10$, $y=311 \pm 10$
 - B. Gain (High light) adjustment:
 - (a) Set mode 5 (800× 600 Fh: 46.8KHz) full white pattern.
 - (b) Brightness set to raster just cutoff and set the contrast to max.
 - (c) Adjust VR801, 802 to make color code $x=281 \pm 10$, $y=311 \pm 10$.
 - C. Recheck item A&B to make sure both of them in spec.

- D. Full white luminance:
 - (a) Set mode 5 (800× 600 Fh: 46.8K) full white pattern.
 - (b) Image size : H:250±4mm, V:187±4mm.
 - (c) Brightness set to raster just cut off and set the contrast to max.
 - (d) Adjust VR701 to make sure white luminance at 25 FL.

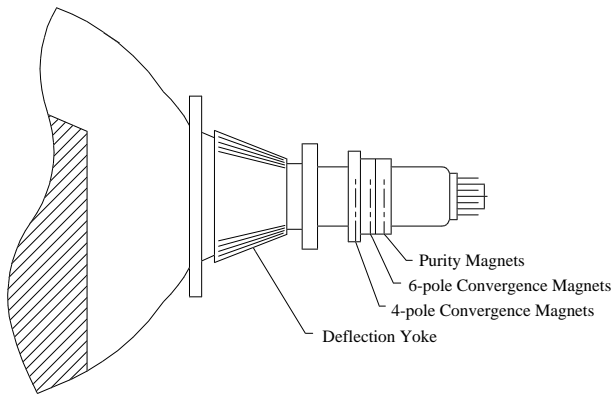
4. Focus adjustment:

- A. Set mode 2 (640× 480 Fh: 31.5KHz) with character full page.
- B. Adjust external brightness to raster cutoff and external contrast to max. , then adjust focus VR to make the display be focused very well.

5. Purity adjustment

- A. Be sure that the display is not being exposed to any external magnetic fields.
- B. Ensure that the spacing between the Purity, Convergence, Magnet, (PCM), assembly and the CRT stem is 29mm .(See below diagram)
- C. Produce a complete, red pattern on the display. Adjust the purity magnet rings on the PCM assembly to obtain a complete field of the color red. This is done by moving the two tabs in such a manner that they advance in an opposite direction but at the same time to obtain the same angle between the two tabs, which should be approximately 180.
- D. Check the complete blue and complete green patterns to observe their respective color purity. make minor adjustments if needed.

RELATIVE PLACEMENT OF TYPICAL COMPONENTS



6. Convergence adjustment

- A. Produce a magenta crosshatch on the display.
- B. Adjust the focus for the best overall focus on the display.
Also adjust the brightness to the desired condition.
- C. Vertical red and blue lines are converged by varying the angle between the two tabs of the 4 pole magnets on the PCM assembly. (See above diagrams)
- D. Horizontal red and blue lines are converged by varying the two tabs together, keeping the angle between them constant.
- E. Produce a white crosshatch pattern on the display.
- F. Vertical green and magenta lines are converged by varying the angle between the two tabs of the 6-pole magnets.
- G. Horizontal green and magenta lines are converged by varying the two tabs together, keeping the angle between them constant.

5. CIRCUIT DESCRIPTION

5-1 MICRO CIRCUIT

IC101 is CPU, This CPU has the following functions.

1. Detect timing mode by sensing the horizontal frequency, vertical frequency, the polarity of Hor. Sync and Ver. Sync.
2. Keyboard scan control.
3. Geometry and volume (4VA/4VnA/4VlrA only) control internal D/A converters and I²C bus control.
4. Cs capacitor switch control.
5. Power saving control.

When CPU detects timing, it takes data from E²PROM (IC102), then output voltage to control the geometry and volume (4VA/4VnA/4VlrA only) of this monitor.

If key is pressed, the CPU will do some job according to the key function. For example, if function key is pressed, it can change different value to control screen geometry (H-SIZE, V-SIZE...etc.)

5-2 DEFLECTION CIRCUIT

Hor. sync. and Ver. sync. come from PC, go into the CPU (IC101). The output goes to the Hor. oscillation and Ver. oscillation processor (IC401). The IC401 treats sync. Signal and output the drive signal to horizontal and vertical output circuit. IC401 also generates some functions for geometry use, like, horizontal center, vertical size, by I²C bus control, the geometry can be controlled. IC601 is a vertical output IC to supply the vertical scan. Q404, Q405, Q406 and L405 are the horizontal size controls. Q403 is the horizontal deflection output, supply the horizontal scan of the monitor. Q707 and Q601 generate the Blanking signal output to G1 of CRT. Q703 Q704 and Q705 are mute control, brightness control and G1 DC voltage output.

5-3 VIDEO CIRCUIT

IC801 is a video amplifier, clamping signal input from pin No. 11 to restore the DC voltage of video signal, the signal output from IC801 pass through IC802 Video package amplifier stage LM2439, then go to the cut off DC restore stage, The video output signal is about 40Vpp.

5-4 POWER SUPPLY

The design uses a discontinuous flyback topology operating in current-mode resulting in a multiple output switcher with stack well. Faster diodes are used. The fast transient response of the control loop maintains picture integrity. Very fast current limiting protects the switcher against short circuits.

UC3842AM (IC901) is the current mode controller selected. It offers feed forward compensation, feedback error amplifier, and low voltage lock out features. The 3842 draws very little current in start up mode. There is enough power from the line bleeder to slowly charge a capacitor to the 16 volts needed to start the switcher.

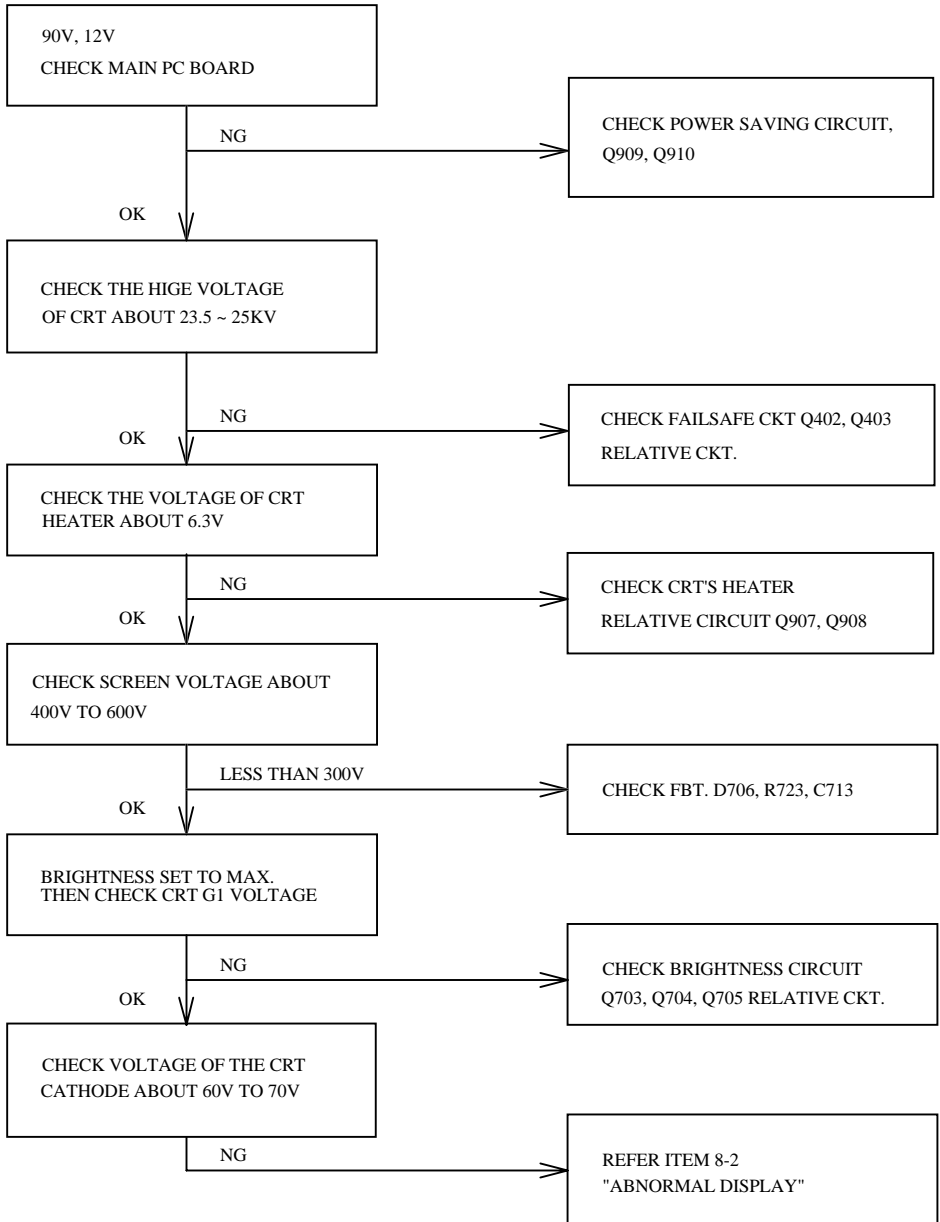
The FET starts a cycle by allowing current to flow into the primary of the power transformer. As current ramps up with time, the voltage across the current sense resistor (R929) also ramps to a point where the 3842 determines that enough power is stored and turns off the FET. As the voltage on the transformer reverses, power is dumped from the main power transformer through diodes into the different supplies. To keep RFI to a minimum and reduce transistor heating, a turn-off snubber network is placed across the FET. Current from the secondary windings are rectified and filtered to create the desired voltages. Small high current capacitors quickly return charging current to the source. Filter inductors remove high frequency noise.

5-5 TRANSISTOR & DIODE CIRCUIT

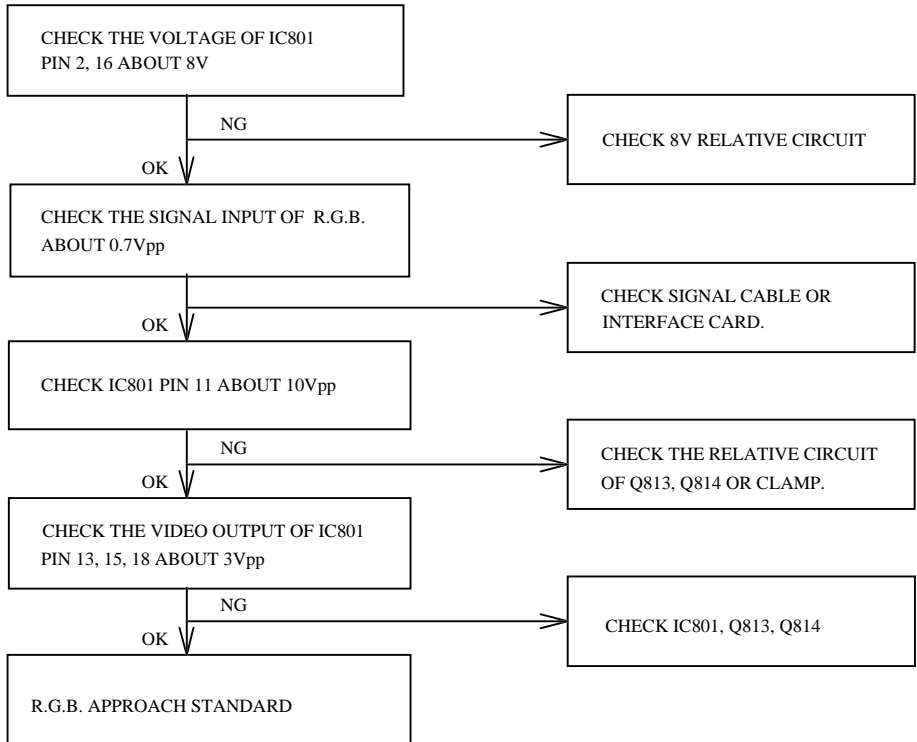
LOCATION	CIRCUIT FUNCTION DESCRIPTION
D901 ~ D904	Bridge Rectifier for AC Source
D909	Half-Wave Rectifier for Start CKT
D910	Clamp Diode for Snubber CKT
D919	Rectifier for Output Voltage
D921	Rectifier for Output Voltage
D922	Rectifier for Output Voltage
D923	Rectifier for Output Voltage
D925	Rectifier for Output Voltage
D927	Forward Bias when Q403 Turn-off to Protect B+ Block CKT
D929	B+ Feed Back Rectifier from F.B.T Pulse
Q904	Start CKT Amplifier Transistor
Q907, Q908	Use for Off-Mode to Cut-off 6.3V Supply Voltage
Q909, Q910	Use for Standy-By or Suspend Mode to Cut-off 15V Supply Voltage
Q912, Q920	Push-Pull Topology to Drive Q911
Q401	Turn-on at Power ON/OFF and Change Mode to Protect Hor.Block
Q402	HOR. Driver Transistor
Q407, Q408	As a Switcher for H-Size Correction CKT
Q410, Q426	H-Size Corection Mosfet (Q426 15" only)
Q404, Q405	As Differential Amp. to Drive Q406
Q406	Darlington Transistor for H-Size Control
Q703	As a Switcher to Mute Screen when Abnormal Qccurring
Q704, Q705	Unit Brightness Control CKT
Q601, Q707	Develop Blanking Signal
Q813, Q814	A Amplifier to Corection and Support Clamp Signal

6.TROUBLE SHOOTING CHART

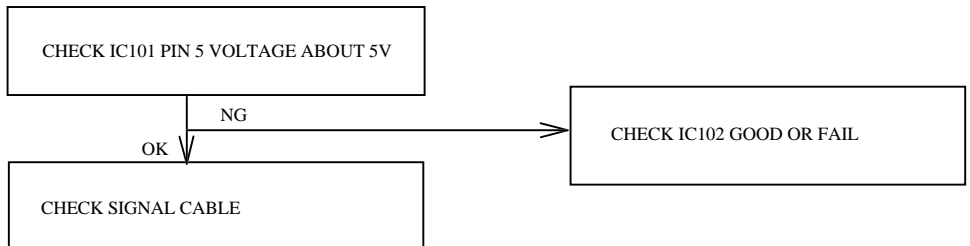
6-1 NO RASTER, CRT RELATIVE CIRCUIT PROBLEMS



2.ABNORMAL VIDEO LEVEL ON SCREEN

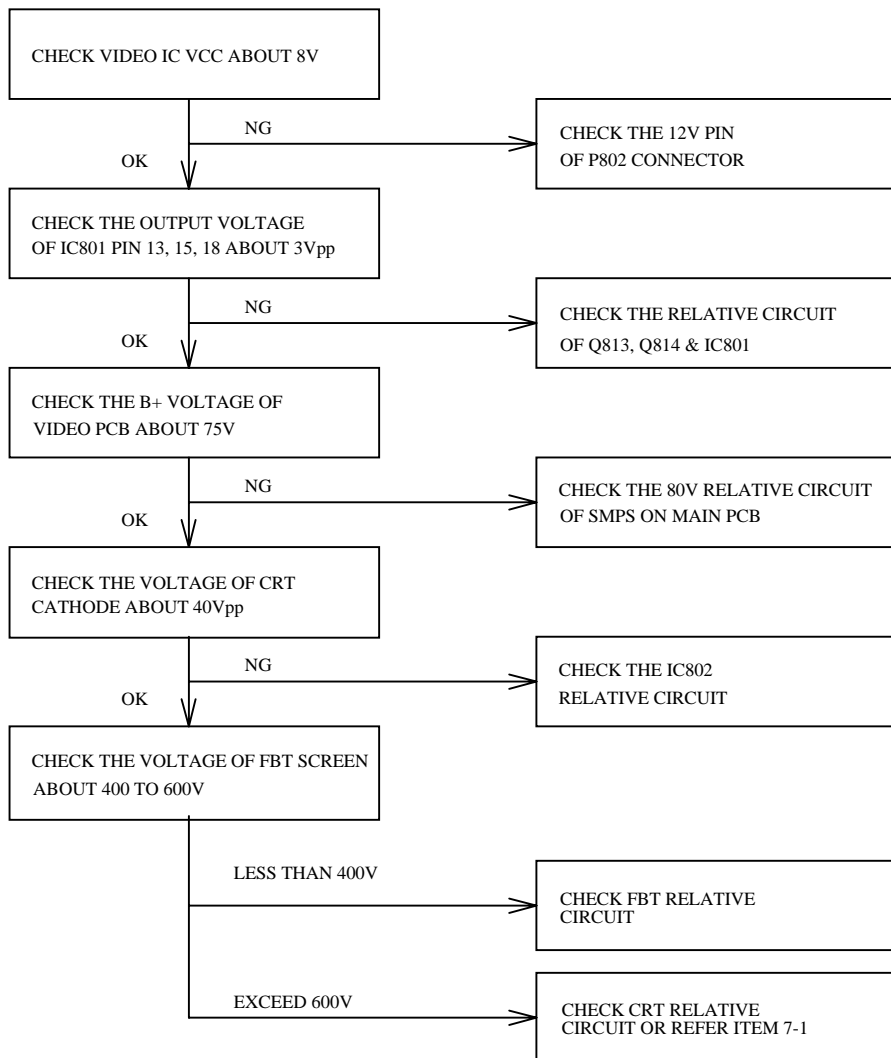


3. ABNORMAL DDC (PLUG & PLAY)

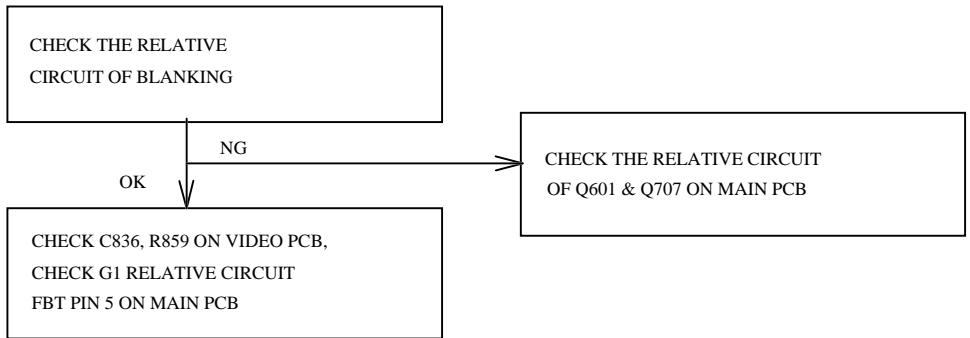


6-2 ABNORMAL DISPLAY

1.NO SIGNAL ON SCREEN

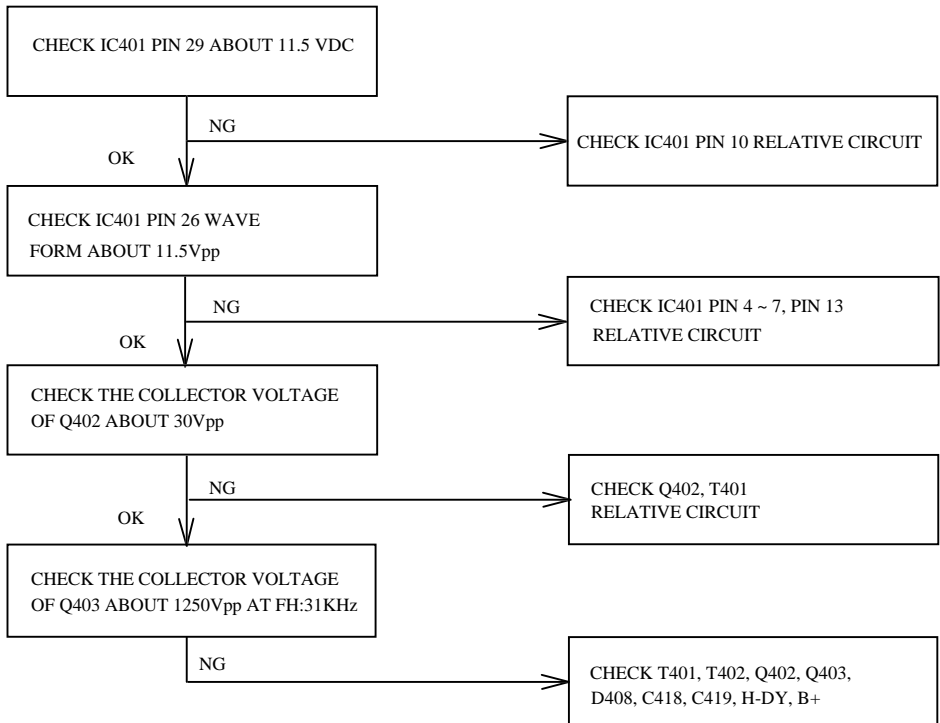


6-3 NO BLANKING



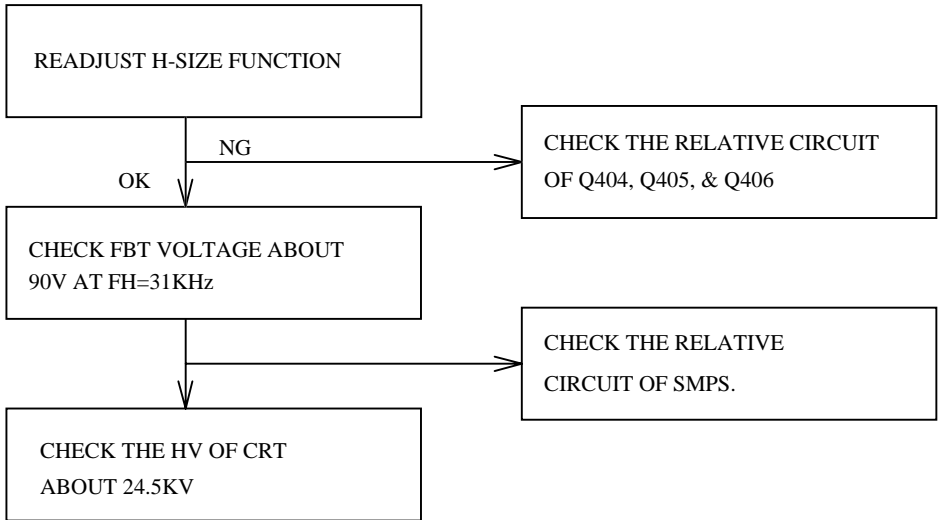
6-4 HOR./OSC/DEF/HV CIRCUIT FAULT

1. NO RASTER (DISCONNECT WITH SIGNAL CABLE)

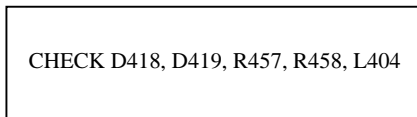


6-5 ABNORMAL HORIZONTAL DEFLECTION

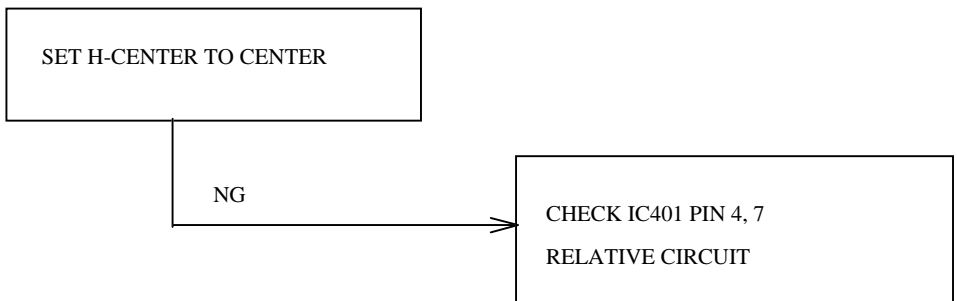
1. ABNORMAL HORIZONTAL SIZE



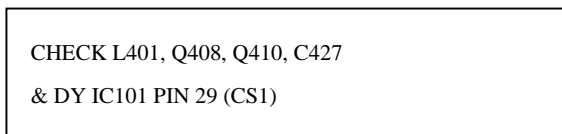
2. ABNORMAL HORIZONTAL RASTER CENTER



3. ABNORMAL HORIZONTAL VIDEO CENTER

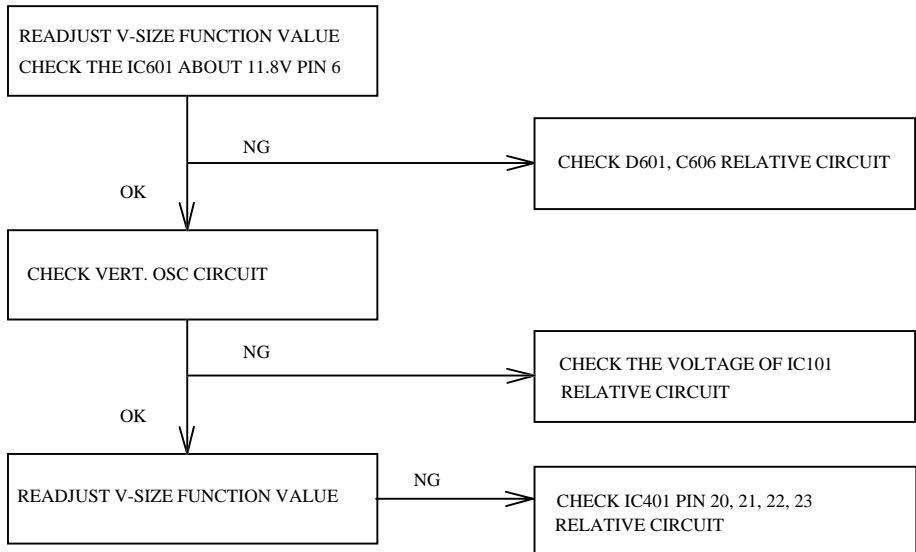


4. ABNORMAL HORIZONTAL LINEARITY

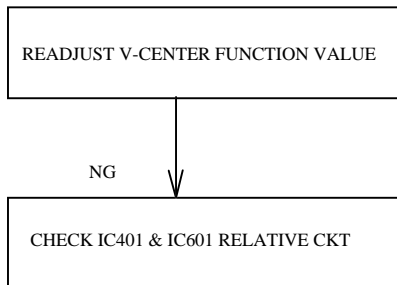


6-6 ABNORMAL VERTICAL SCANNING

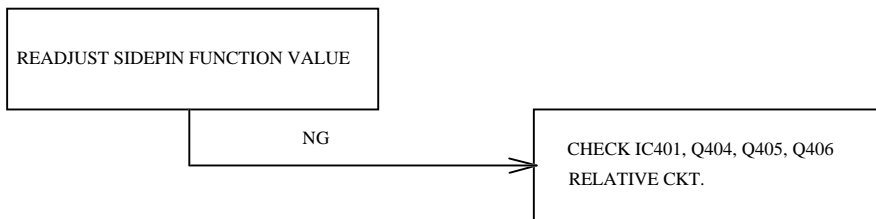
1. ABNORMAL VERTICAL SIZE



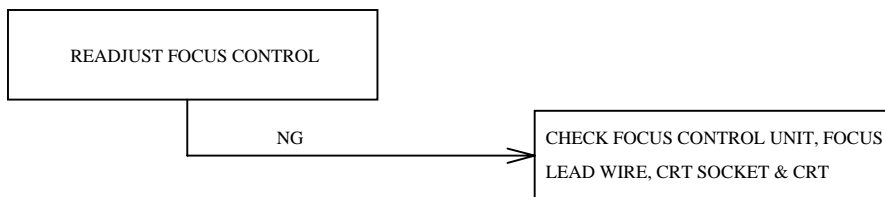
2. VERTICAL CENTER



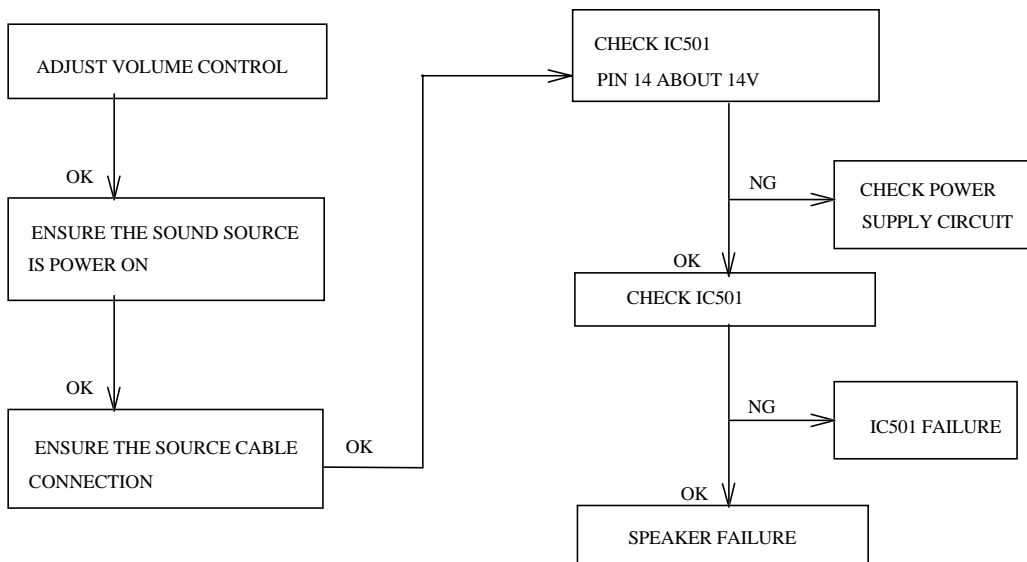
6-7 SIDE-PIN CUSHION DISTORTION



6-8 POOR FOCUS



6-9 NO SOUND (FOR 5EA/5ElrA ONLY)

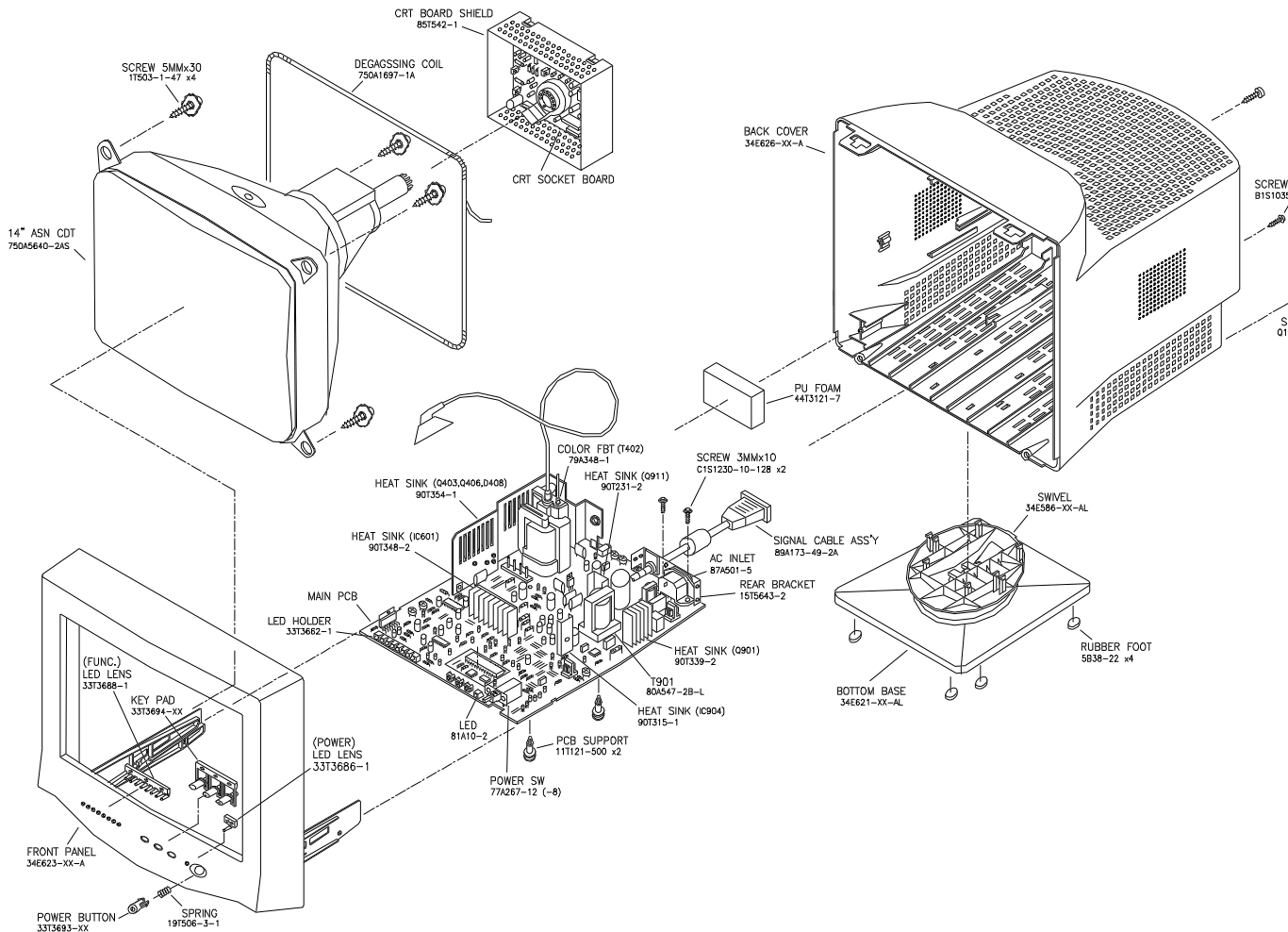


6-10 POWER SUPPLY TROUBLE SHOOTING CHART

BEFORE CHECK SW.REG. PLEASE REFER TO THE POWER SUPPLY BLOCK DIAGRAM

POWER SUPPLY OUTPUT: (A) VARIABLE OUTPUT : 90V - 160V
(D) EPENDING UPON H.SYNC FREQUENCY)
(B) CONSTANT OUTPUT : 6.3V, 15V, -12V, 75V





PARTS LIST OF CABINET

LOCATION	D356P (LOW RADIATION 110V) CMC356PA AUPC556NA				SPECIFICATION
					CHAS ASS'Y AUDIO BOARD
	1A	503-	1 -	47	SCREW
	5A	38-	8		RUBBER WASHER
	5A	6001-	1		RUBBER WASHER
	9A	84-	23		TERMINAL LUG
	11A	112-	1		WIRE MOUNTS
	11A	6001-	1		WIRE MOUNT
	15A	5663-	500		RETAINER SPEAKER
	19A	403-	5		BUMPER STEEL SPRING
	26A	800-	504 -	1	BARCODE
	33A	3598-	1		ABS PLASTIC
	33A	3697-	1		KEY PAD
	33A	3698-	1		FUNC LED LENS
	34A	625-	5 -	A	FRONT PANEL
	40A	153-	63		CRT LABEL
	40A	154-	501 -	1	HI-POT GROUNDING LABEL
	40A	581-	26 -	659	LABEL
	40A	581-	26 -	704	LABEL
	40A	2006-	615 -	2C	ID LABEL
	41A	68-	563		WARRANTY CARD
	41A	68-	576		WARRANTY CARD
	41A	520-	615 -	1B	MANUAL
	44A	3121-	510		PU FOAM
	44A	6528-	1 -		EPS CUSHION
	44A	6528-	2		EPS CUSHION
	44A	6528-	615 -	2D	CARTON
	45A	76-	28 -	R	PE BAG
	45A	77-	500		BARCODE RIBBON
	45A	88-	1 -	R	PE BAG
	71A	303-	9 -	C	SPPILER
	85A	542-	1		SHIELD
	89A	171-	25A		POWER CORD
	89A	173-	56 -	4	AUDIO CABLE
	95A	91-	205 -	1	WIRE
	95A	205R-	30 -	122	WIRE
	95A	8013-	2		WIRE
	B1A	1035-	10 -	128	SCREW
	Q1A	330-	10 -	128	SCREW
	Q1A	340-	16 -	128	SCREW
	Q1A	1030-	10 -	128	SCREW
	705A	356N-	F34 -	01	CAB'T ASS'Y
	705A	556T-	C78 -	01	SPEAKER ASS'Y
	750A	1697-	1G -	D	DEG. COIL UL/CSA
	750A	5640-	2AS		.28MM/CHUNGHWA
CM1	95A	205R-	30 -	132	WIRE ASS'Y

PARTS LIST OF AUDIO BOARD

LOCATION	AUPC556NA				SPECIFICATION
C507	67A	309-	101 -	3T	100uF +-20% 16V
EARPHON	88A	302-	5J		PHONE JACK
H501	95A	8013-	5 -	505	WIRE ASS'Y
P503-A	33A	3278-	4		4P PLUG
	715A	602-	2		AUDIO PCB
R590	95A	90-	23		TIN COATED
R591	95A	90-	23		TIN COATED

PARTS LIST OF CHAS

LOCATION	CMC356PA CMP356PAAI CRPC356P	SPECIFICATION MAIN PC BOARD ASS'Y CRT BOARD ASS'Y
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	11A	121-	500		PC SUPPORT	
	15A	5640-	1 -	A	GND LUG	
	15A	5643-	3		BRACKET	
	33A	3662-	1		LED HOLDER	
	40A	581-	26 -	684	FAIL-SAFE LABEL	
	40A	581-	26 -	702	LABEL	
	71A	55-	2		BEAD	
	71A	100-	7 -	H	FERRITE CORE	
	84A	33-	10		FUSE	
	89A	173-	49A -	2D	SIGNAL CABLE	
	90A	345-	501 -	2	HEAT SINK	
	95A	90-	24		TIN COATED	
	B1A	1030-	10 -	128	SCREW	
	B1A	1040-	8 -	128	SCREW	
	M1A	1140-	6 -	128	SCREW	
	M1A	1730-	11 -	128	SCREW	
	Q1A	1135-	10 -	128	SCREW	
	705A	356N-	C57 -	02	Q901 ASS'Y	
	705A	356N-	C57 -	03	Q911 ASS'Y	
	705A	356P-	C56 -	01	IC601 ASS'Y	
	705A	356P-	C57 -	01	D408/Q403/Q406 ASS'Y	
	705A	356P-	C87 -	01	AC LINET INALWAYS	
	705A	569D-	C56 -	02	IC904 ASS'Y	
	750A	5640-	356 -	ASP	CRT ASS'Y	
(GND2)	95A	205-	30 -	082	WIRE ASS'Y	
(LED1)	81A	10-	2 -	S	LED	
(SW101)	77A	602-	1 -	HJ	TSVB-3B TACT SWITCH	
(SW102)	77A	602-	1 -	HJ	TSVB-3B TACT SWITCH	
(SW103)	77A	602-	1 -	HJ	TSVB-3B TACT SWITCH	
AS1	95A	207T-	30 -	052	WIRE ASS'Y	
AUDIO I	88A	302-	6J		AUDIO JACK	
C414	67A	305-	470 -	9	47uF +-20% 100V	
C418	63A	210J-	392 -	8FC	3900PF +-5% 2KV	
C419	63A	210J-	432 -	8FC	4300PF +-5% 2KV	
C421	65A	1K-	102 -	1A	1000PF +-10% 1KV	
C422	63A	100J-	225 -	59	2.2Uf +-5% 100V	
C425	63A	210J-	334 -	3CC	0.33Uf +-5% 400V	
	C427	63A	210J-	364 -	2CC	0.36Uf +-5% 250V
	C431	63A	210J-	104 -	2BC	0.1Uf +-5% 250V
	C432	67A	215-	470 -	11J	47Uf 200V JAMICON
	C440	65A	2K-	470 -	6B	47P 2KVF +-10% Y5U
	C441	64A	44J-	224 -	1AT	0.22Uf 100V
	C502	67A	305-	222 -	3M	2200Uf 16V
	C603	67A	309-	471 -	3	470uF +-20% 16V
	C605	67A	309-	221 -	6	220uF +-20% 35V
	C606	67A	309-	102 -	3	1000uF +-20% 16V
	C709	65A	1K-	561 -	5A	560PF 10% 1KV Y5P
	C713	67A	309-	220 -	10	22uF +-20% 160V
	C714	67A	305-	331 -	3	330Uf 20% 16V
	C900	65A	305M-	472 -	2B	4700PF +-20% 400VAC/250VAC
	C901	63A	107-	224 -	5S	0.22uF +-20% 250V
	C902	63A	107-	104 -	5	0.1uF +-20% 250V
	C907	67A	30-	151 -	14L	150uF +-20% 400V
	C915	65A	2M-	103 -	3B	0.01uF +-20% 2KV Z5U
	C923	65A	1K-	331 -	5A	330PF 1KV
	C931	67A	305-	101 -	11J	100uF +-20% 200V
	C936	67A	305-	102 -	4	1000uF +-20% 25V
	C937	67A	305-	471 -	3	470uF +-20% 16V
	C938	67A	305-	471 -	3	470uF +-20% 16V
	C939	67A	305-	102 -	3	1000uF +-20% 16V

	LOCATION	CMC356PA				SPECIFICATION
	C942	67A	309-	102 -	4	1000uF +-20% 25V
	C950	65A	1K-	221 -	5A	220PF +-10% Y5P 1KV
	C951	67A	215-	470 -	11J	47uF 200V JAMICON
	C955	65A	1K-	221 -	5A	220PF+-10% Y5P 1KV
!	C963	65A	305M-	472 -	2B2	4700PF +-20% 400VAC/250VAC
	C964	65A	305M-	472 -	2B2	4700PF +-20% 400VAC/250VAC
	CN902	33A	3074-	1		2P PLUG
	D1	93A	64-	11H -	52T	DIODE IN4148
	D901	93A	52-	41 -	52T	DIODE IN5406
	D902	93A	52-	41 -	52T	DIODE IN5406
	D903	93A	52-	41 -	52T	DIODE IN5406
	D904	93A	52-	41 -	52T	DIODE IN5406
	D919	93A	3040-	10		DIODE
	D922	93A	3020-	6 -	52T	STPR320
	D923	93A	3020-	8		RG-4Z
	F901	84A	7-	45		FUSE 2.5A 250V S-B/BEL
	H802	95A	8013-	9 -	7	HARNESS 9P-9P 370MM
	H803	95A	8013-	6 -	1	6-6P WIRE
	HS1	95A	205T-	30 -	042	WIRE
	IC101	56A	1125-	33 -	X	NT68P61A
	IC102	56A	1133-	8		8 PIN AT24C04 EEPROM
	IC104	56A	74LS-	14 -	H	14 PIN IC 74LS14
!	IC401	56A	573-	1		TDA9111
	IC501	56A	535-	1		TDA7057AQ
	IC901	56A	379-	12		UC3842AM
	JJ1	95A	201-	69 -	012	WIRE
	L401	73A	147-	103 -	L	LINEARITY COIL
	L404	73A	253-	70		1.5MH +-5% 0.3A
	L405	73A	253-	68 -	L	180UH +-10%
	L901	73A	174-	2 -	LA	COIL 15MH MIN
	L903	73A	259-	4		200UH +-5%
	L906	73A	253-	90 -	L	CHOKO COIL
	LED2	81A	2-	3 -	2B	LED GREENBL-B2441J
	LED3	81A	2-	3 -	2B	LED GREENBL-B2441J
	LED4	81A	2-	3 -	2B	LED GREENBL-B2441J
	LED5	81A	2-	3 -	2B	LED GREENBL-B2441J
	LED6	81A	2-	3 -	2B	LED GREENBL-B2441J
	LED7	81A	2-	3 -	2B	LED GREENBL-B2441J
	LED8	81A	2-	3 -	2B	LED GREENBL-B2441J
	LED9	81A	2-	3 -	2B	LED GREENBL-B2441J
	P401	33A	3192-	500		2 P PLUG
	P402	33A	3192-	4		4 P PLUG
	P403	33A	8009-	3		3 P PLUG
	P503	33A	3278-	5		5 P PLUG
!	NR901	61A	58-	8		NTCR 15 OHM
	PR901	61A	52-	22 -	3	220VAC 14 OHM PTCR
	Q410	57A	600-	14		CEPF630
	Q705	57A	690-	1		POWER AMP. 2SB649A/HITACH
	Q907	57A	690-	2		PNP TR. BD140
	Q909	57A	728-	3		HSB772P/HSB772E
	R127	61A	152M-	910 -	64	91 OHM +-5% 2W
	R426	61A	153M-	220 -	59	22 OHM +-5% 3W
	R428	61A	153M-	688 -	59	0.68 OHM +-5% 3W
	R456	61A	153M-	391 -	59	390 OHM +-5% 3W
	R457	61A	153M-	330 -	59	33 OHM +-5% 3W
	R458	61A	153M-	560 -	59	56 OHM +-5% 3W
	R461	61A	153M-	151 -	59	150 OHM +-5% 3W
	R501	61A	153M-	339 -	59	3.3 OHM 3W
	R509	61A	153M-	339 -	59	3.3 OHM 3W
	R510	61A	153M-	339 -	59	3.3 OHM 3W
	R607	61A	208-	918 -	64	0.91 OHM +-5% 1W
	R608	61A	152M-	100 -	64	10 OHM +-5% 2W
	R723	61A	152M-	101 -	64	100 OHM +-5% 2W
!	R927	61A	153M-	333 -	59	33K OHM +-5% 3W
	R929	61A	20K-	338 -	GB1	0.33 OHM +-10% 2W
	R955	61A	303-	228 -	64	0.22 OHM +-5% 1W
	R989	61A	152M-	471 -	64	470 OHM +-5% 2W



LOCATION	CMC356PA				SPECIFICATION
SS1	95A	207T-	30 -	052	WIRE
SW901	77A	267-	12 -	HJ	PWR SW
T401	79A	167-	71A		DRIVER X'FMR
T402	79A	355	4 -	A	FBT
T901	80A	356T	1 -	L	POWER X'FMR
TP902	9A	211-	2		PIN
VR701	75A	335-	473		47K OHM +-30%
VR702	75A	335M-	204 -	H	200K OHM METAL VR
VR901	75A	335-	101		100 OHM +-30%
VR902	75A	335-	223		22K OHM +-30%
X101	93A	22-	22		8.0000 MHZ/S.P.K.

PARTS LIST OF MAIN PC BOARD

LOCATION	CMP356PAAI				SPECIFICATION
	6A	31-	4		BRASS
	715A	684-	G		MAIN BOARD
C103	65A	450-	104 -	7T	0.1uF +80-20% Y5V 50V
C104	67A	309-	101 -	4T	100uF +-20% 25V
C105	65A	450-	104 -	7T	0.1uF +80-20% Y5V 50V
C106	67A	309-	330 -	7T	33uF +-20% 50V
C109	67A	60-	229 -	7T	2.2uF /50V
C110	67A	309-	109 -	7T	1.0Uf +-20% 50V
C113	67A	309-	101 -	4T	100Uf +-20% 25V
C130	65A	442-	100 -	13T	10PF +-5% 50V NPO
C160	65A	444-	101 -	5T	100 PF 10% 50V Y5P
C162	65A	444-	102 -	13T	1000 PF 10% 50V Z5P
C163	65A	444-	101 -	5T	100 PF 10% 50V Y5P
C164	65A	450-	104 -	7T	0.1uF +80-20% Y5V 50V
C403	64A	44J-	223 -	1AT	0.22uF +-2% 100V
C405	67A	309-	470 -	3T	47uF +-20% 16V
C406	65A	450-	104 -	7T	0.1uF +80-20% Y5V 50V
C407	65A	444-	101 -	5T	100 PF 10% 50V Y5P
C408	65A	444-	101 -	5T	100 PF 10% 50V Y5P
C410	65A	450-	104 -	7T	0.1uF +80-20% Y5V 50V
C411	67A	309-	470 -	3T	47uF +-20% 16V
C412	65A	442-	221 -	13T	220PF +-5% 50V
C413	65A	450-	104 -	7T	0.1uF +80-20% Y5V 50V
C415	64A	176J-	102 -	1T	0.001uF +-5% 100V
C417	64A	176J-	154 -	0T	0.15uF +-5% 63/50V
C423	65A	444-	332 -	5T	3300 PF 10% 50V Y5P
C430	95A	90-	23		TIN COATED
C433	67A	309-	100 -	7T	10Uf +-20% 50V
C434	67A	309-	220 -	7T	22Uf +-20% 50V
C435	64A	44J-	103 -	1AT	0.01Uf +-2% 100V
C436	67A	305-	470 -	7T	47Uf +-20% 50V
C437	67A	309-	220 -	3T	22Uf +-20% 16V
C439	67A	309-	109 -	7T	1.0Uf +-20% 50V
C442	64A	176J-	272 -	1T	2700PF +-5% 100V
C443	67A	309-	470 -	3T	47Uf +-20% 16V
C444	65A	450-	104 -	7T	0.1Uf +80-20% Y5V 50V
C445	95A	90-	23		TIN COATED
C446	65A	444-	101 -	5T	100PF10% Y5P 50V
C447	64A	45G-	102 -	1AT	0.001uF +-2% 100V
C448	64A	176J-	473 -	1T	0.047uF +-5% 100V
C449	64A	44J-	473 -	1AT	0.047uF +-2% 100V
C460	65A	450-	333 -	7T	0.033uF +-5% 50V
C463	64A	44J-	103 -	1AT	0.1uF +-2% 100V
C476	65A	450-	104 -	7T	0.1uF +80-20% Y5V 50V
C503	67A	309-	100 -	7T	10Uf +-20% 50V
C504	67A	309-	100 -	7T	10Uf +-20% 50V
C505	67A	309-	109 -	7T	1Uf +-20% 50V





LOCATION

CMP356PAI

SPECIFICATION

C506	67A	309-	109 -	7T	1Uf +-20% 50V
C510	67A	176J-	472 -	1T	0.0047Uf +/5% 100V
C511	64A	176J-	472 -	1T	0.0047Uf +/5% 100V
C601	64A	44J-	104 -	1AT	0.1uF +-2% 100V
C602	65A	444-	331 -	5T	330PF10% Y5P 50V
C604	64A	176J-	224 -	0T	0.22uF +-5% 63V
C607	65A	444-	681 -	5T	680PF10% Y5P 50V
C608	65A	450-	104 -	7T	0.1uF +80-20% Y5V 50V
C609	64A	44J-	104 -	1AT	0.1uF +-2% 100V
C610	64A	176J-	474 -	0T	0.47uF +-5% 63V/50V
C611	65A	450-	104 -	7T	0.1uF +80-20% Y5V 50V
C612	67A	309-	470 -	3T	47uF +-20% 16V
C613	64A	44J-	154 -	1AT	0.15uF +-2% 100V
C614	65A	444-	101 -	5T	100PF10% Y5P 50V
C615	64A	44J-	103 -	1AT	0.01uF +-2% 100V
C705	67A	309-	220 -	7T	22uF +-20% 50V
C707	64A	176J-	223 -	2T	0.022uF +-5% 250V
C710	64A	176J-	224 -	1T	0.22uF +-5% 100V
C712	67A	60-	229 -	7T	2.2uF +-20% 50V
C914	67A	309-	479 -	7T	4.7uF +-20% 50V
C916	67A	305-	101 -	4T	100uF +-20% 25V
C917	67A	305-	229 -	7T	2.2uF +-20% 50V
C918	64A	44J-	332 -	1AT	330pF +-2% 100V
C920	64A	44J-	102 -	1AT	1000PF 100V
C921	64A	44J-	104 -	1AT	0.1uF +-5% 100V
C922	64A	176J-	104 -	1T	0.1uF +-5% 100V
C924	64A	44J-	332 -	1AT	330PF 100V
C925	67A	309-	100 -	7T	10uF +-20% 50V
C941	64A	176J-	104 -	0T	0.1uF +-5% 63V
C943	64A	176J-	222 -	1AT	2200PF 100V
C944	65A	450-	104 -	7T	0.1uF +80-20% Y5V 50V
C945	64A	44J-	104 -	1AT	0.1uF +-5% 100V
C946	64A	176J-	104 -	2T	0.1uF +-5% 250V MPE
C947	67A	309-	479 -	7T	4.7uF +-20% 50V
C961	64A	44J-	103 -	1AT	0.01uF +-5% 100V
C965	64A	44J-	103 -	1AT	0.01uF +-5% 100V
C995	64A	44J-	472 -	1AT	4700PF 100V
D101	93A	64-	11H -	52T	DIODE IN4148
D102	93A	64-	11H -	52T	DIODE IN4148
D103	93A	64-	11H -	52T	DIODE IN4148
D104	93A	61-	11H -	52T	DIODE IN4148
D125	61A	602-	102 -	52T	1K OHM 5% 1/6W
D402	93A	64-	11H -	52T	DIODE IN4148
D404	93A	64-	11H -	52T	DIODE IN4148
D403	93A	1002-	1T -	52T	IN5817 1A/20V
D406	93A	60-	21P -	52T	PS156R
D407	93A	60-	21P -	52T	PS156R
D409	93A	64-	11H -	52T	DIODE IN4148
D411	93A	64-	19G -	52T	FAST RECPVERY
D412	93A	64-	11H -	52T	DIODE IN4148
D414	93A	60-	38T -	52T	FR103
D415	93A	60-	26T -	52T	FR107
D418	93A	60-	21P -	52T	PS156R
D419	93A	60-	21P -	52T	PS156R
D420	93A	64-	11H -	52T	DIODE IN4148
D450	93A	64-	11H -	52T	DIODE IN4148
D460	93A	64-	11H -	52T	DIODE IN4148
D601	93A	52-	47P -	52T	IN4004
D602	93A	64-	11H -	52T	DIODE IN4148
D603	93A	64-	11H -	52T	DIODE IN4148
D701	93A	64-	11H -	52T	DIODE IN4148
D702	93A	64-	11H -	52T	DIODE IN4148
D704	93A	52-	47P -	52T	IN4004
D706	93A	60-	21P -	52T	PS156R
D710	95A	90-	23		TIN COATED
D721	95A	90-	23		TIN COATED



LOCATION	CMP356PAI				SPECIFICATION
D909	93A	52-	1T -	52T	1A 600V IN4005
D910	93A	60-	21P -	52T	PS156R
D911	93A	64-	31T -	52T	SWITCH DIODE
D912	93A	64-	31T -	52T	SWITCH DIODE
D913	93A	64-	11H -	52T	DIODE IN4148
D914	93A	64-	11H -	52T	DIODE IN4148
D925	93A	3020-	6 -	52T	STPR320
D926	93A	64-	11H -	52T	DIODE IN4148
D927	93A	64-	11H -	52T	DIODE IN4148
D928	93A	64-	11H -	52T	DIODE IN4148
D930	93A	1040-	2 -	52T	F.R.D. UF4004
D995	93A	64-	11H -	52T	DIODE IN4148
D929	93A	52-	47P -	52T	DIODE IN4004
FB401	71A	55-	9 -	T	SHIELDED
FB501	95A	90-	23		TIN COATED
FB502	95A	90-	23		TIN COATED
FB503	95A	90-	23		TIN COATED
FB901	95A	90-	23		TIN COATED
FB902	95A	90-	23		TIN COATED
FB903	95A	90-	23		TIN COATED
FB904	71A	55-	9 -	T	SHIELD BEAD
FB905	95A	90-	23		TIN COATED
FB907	71A	55-	9 -	T	SHIELD BEAD
J001	95A	90-	23		TIN COATED
J003	95A	90-	23		TIN COATED
J004	95A	90-	23		TIN COATED
J005	95A	90-	23		TIN COATED
J006	95A	90-	23		TIN COATED
J008	95A	90-	23		TIN COATED
J009	95A	90-	23		TIN COATED
J010	95A	90-	23		TIN COATED
J011	95A	90-	23		TIN COATED
J012	95A	90-	23		TIN COATED
J013	95A	90-	23		TIN COATED
J014	95A	90-	23		TIN COATED
J015	95A	90-	23		TIN COATED
J016	95A	90-	23		TIN COATED
J019	95A	90-	23		TIN COATED
J020	95A	90-	23		TIN COATED
J021	95A	90-	23		TIN COATED
J022	95A	90-	23		TIN COATED
J023	95A	90-	23		TIN COATED
J024	95A	90-	23		TIN COATED
J025	95A	90-	23		TIN COATED
J026	95A	90-	23		TIN COATED
J027	95A	90-	23		TIN COATED
J028	95A	90-	23		TIN COATED
J029	95A	90-	23		TIN COATED
J030	95A	90-	23		TIN COATED
J032	95A	90-	23		TIN COATED
J033	95A	90-	23		TIN COATED
J034	95A	90-	23		TIN COATED
J036	95A	90-	23		TIN COATED
J037	95A	90-	23		TIN COATED
J038	95A	90-	23		TIN COATED
J039	95A	90-	23		TIN COATED
J041	95A	90-	23		TIN COATED
J042	95A	90-	23		TIN COATED
J043	95A	90-	23		TIN COATED
J044	95A	90-	23		TIN COATED
J045	95A	90-	23		TIN COATED
J046	95A	90-	23		TIN COATED
J049	95A	90-	23		TIN COATED
J050	95A	90-	23		TIN COATED
J051	95A	90-	23		TIN COATED

LOCATION	CMP356P AI			SPECIFICATION
J052	95A	90-	23	TIN COATED
J053	95A	90-	23	TIN COATED
J054	95A	90-	23	TIN COATED
J057	95A	90-	23	TIN COATED
J058	95A	90-	23	TIN COATED
J061	95A	90-	23	TIN COATED
J062	95A	90-	23	TIN COATED
J063	95A	90-	23	TIN COATED
J064	95A	90-	23	TIN COATED
J065	95A	90-	23	TIN COATED
J066	95A	90-	23	TIN COATED
J067	95A	90-	23	TIN COATED
J068	95A	90-	23	TIN COATED
J069	95A	90-	23	TIN COATED
J070	95A	90-	23	TIN COATED
J071	95A	90-	23	TIN COATED
J072	95A	90-	23	TIN COATED
J073	95A	90-	23	TIN COATED
J074	95A	90-	23	TIN COATED
J075	95A	90-	23	TIN COATED
J077	95A	90-	23	TIN COATED
J078	95A	90-	23	TIN COATED
J079	95A	90-	23	TIN COATED
J080	95A	90-	23	TIN COATED
J081	95A	90-	23	TIN COATED
J082	95A	90-	23	TIN COATED
J083	95A	90-	23	TIN COATED
J084	95A	90-	23	TIN COATED
J085	95A	90-	23	TIN COATED
J086	95A	90-	23	TIN COATED
J087	95A	90-	23	TIN COATED
J088	95A	90-	23	TIN COATED
J089	95A	90-	23	TIN COATED
J090	95A	90-	23	TIN COATED
J091	95A	90-	23	TIN COATED
J092	95A	90-	23	TIN COATED
J093	95A	90-	23	TIN COATED
J094	95A	90-	23	TIN COATED
J095	95A	90-	23	TIN COATED
J096	95A	90-	23	TIN COATED
J097	95A	90-	23	TIN COATED
J098	95A	90-	23	TIN COATED
J099	95A	90-	23	TIN COATED
J100	95A	90-	23	TIN COATED
J101	95A	90-	23	TIN COATED
J102	95A	90-	23	TIN COATED
J103	95A	90-	23	TIN COATED
J104	95A	90-	23	TIN COATED
J105	95A	90-	23	TIN COATED
J107	95A	90-	23	TIN COATED
J108	95A	90-	23	TIN COATED
J109	95A	90-	23	TIN COATED
J110	95A	90-	23	TIN COATED
J111	95A	90-	23	TIN COATED
J112	95A	90-	23	TIN COATED
J113	95A	90-	23	TIN COATED
J114	95A	90-	23	TIN COATED
J115	95A	90-	23	TIN COATED
J116	95A	90-	23	TIN COATED
J117	95A	90-	23	TIN COATED
J118	95A	90-	23	TIN COATED
J120	95A	90-	23	TIN COATED
J121	95A	90-	23	TIN COATED
J123	95A	90-	23	TIN COATED
J125	95A	90-	23	TIN COATED

LOCATION	CMP356QAI				SPECIFICATION
J127	95A	90-	23		TIN COATED
J130	95A	90-	23		TIN COATED
L101	73A	53-	339 -	10T	3.3UH +-10%
L402	95A	90-	23		TIN COATED
L403	95A	90-	23		TIN COATED
L406	95A	90-	23		TIN COATED
L907	95A	90-	23		TIN COATED
Q101	57A	446-	1 -	T	TR. 2SC1213AC
Q401	57A	419-	P -	T	2SC945P/NEC
Q402	57A	706-	2 -	T	2N7000
Q404	57A	420-	SG -	T	KSA733GC SAMSUNG
Q405	57A	420-	SG -	T	KSA733GC SAMSUNG
Q408	57A	419-	P -	T	2SC945P/NEC
Q601	57A	419-	Y -	T	TR. 2SC1815Y TOSHIBA
Q703	57A	419-	P -	T	2SC945P/NEC
Q704	57A	420-	SG -	T	KSA733GC SAMSUNG
Q707	57A	419-	Y -	T	TR. 2SC1815Y TOSHIBA
Q904	57A	594-	501 -	T	TR. 2N6517
Q908	57A	419-	P -	T	2SC945P/NEC
Q910	57A	419-	P -	T	2SC945P/NEC
Q912	57A	446-	1 -	T	1213AC
Q914	95A	90-	23		TIN COATED
Q920	57A	727-	2 -	T	2SA673C
R100	61A	602-	472 -	52T	4.7K OHM +-5% 1/6W
R101	61A	602-	102 -	52T	1K OHM +-5% 1/6W
R102	61A	602-	102 -	52T	1K OHM +-5% 1/6W
R103	61A	602-	102 -	52T	1K OHM +-5% 1/6W
R104	61A	602-	102 -	52T	1K OHM +-5% 1/6W
R105	61A	602-	102 -	52T	1K OHM +-5% 1/6W
R106	61A	602-	102 -	52T	1K OHM +-5% 1/6W
R107	61A	602-	102 -	52T	1K OHM +-5% 1/6W
R108	61A	602-	512 -	52T	5.1K OHM +-5% 1/6W
R109	61A	602-	512 -	52T	5.1K OHM +-5% 1/6W
R110	61A	602-	221 -	52T	220 OHM +-5% 1/6W
R111	61A	602-	221 -	52T	220 OHM +-5% 1/6W
R112	61A	602-	622 -	52T	6.2K OHM +-5% 1/6W
R113	61A	602-	103 -	52T	10K OHM +-5% 1/6W
R114	61A	602-	102 -	52T	1K OHM +-5% 1/6W
R116	61A	602-	472 -	52T	4.7K OHM +-5% 1/6W
R117	61A	602-	101 -	52T	100 OHM +-5% 1/6W
R118	61A	602-	103 -	52T	10K OHM +-5% 1/6W
R119	61A	602-	103 -	52T	10K OHM +-5% 1/6W
R122	61A	172-	221 -	52T	220 OHM +-5% 1/4W
R126	61A	172-	202 -	52T	2K OHM +-5% 1/4W
R132	61A	602-	102 -	52T	1K OHM +-5% 1/6W
R134	61A	602-	912 -	52T	9.1K OHM +-5% 1/6W
R135	61A	602-	152 -	52T	1.5K OHM +-5% 1/6W
R136	61A	602-	222 -	52T	2.2K OHM +-5% 1/6W
R137	61A	602-	272 -	52T	2.7K OHM +-5% 1/6W
R140	61A	602-	472 -	52T	4.7K OHM +-5% 1/6W
R143	61A	602-	101 -	52T	100 OHM +-5% 1/6W
R149	61A	602-	152 -	52T	1.5K OHM +-5% 1/6W
R156	61A	602-	103 -	52T	10K OHM +-5% 1/6W
R157	61A	602-	103 -	52T	10K OHM +-5% 1/6W
R160	61A	602-	221 -	52T	220 OHM +-5% 1/6W
R161	61A	602-	222 -	52T	2.2K OHM +-5% 1/6W
R165	61A	602-	222 -	52T	2.2K OHM +-5% 1/6W
R166	61A	602-	102 -	52T	1K OHM +-5% 1/6W
R172	61A	602-	102 -	52T	1K OHM +-5% 1/6W
R180	61A	602-	362 -	52T	3.6K OHM +-5% 1/6W
R185	93A	64-	11H -	52T	DIODE 1N4148
R402	61A	172-	222 -	52T	2.2K OHM +-5% 1/4W
R403	61A	602-	101 -	52T	100 OHM +-5% 1/6W
R404	61A	602-	101 -	52T	100 OHM +-5% 1/6W
R405	61A	602-	101 -	52T	100 OHM +-5% 1/6W

LOCATION	CMP356PAI				SPECIFICATION
R406	61A	602-	101 -	52T	100 OHM +-5% 1/6W
R408	61A	172-	304 -	52T	300K OHM +-5% 1/4W
R409	61A	172-	364 -	52T	360K OHM +-5% 1/4W
R410	61A	210-	472 -	52T	4.7K OHM +-1% 1/6W
R411	61A	602-	182 -	52T	1.8K OHM +-5% 1/6W
R414	61A	172-	242 -	52T	2.4K OHM +-5% 1/4W
R415	61A	172-	753 -	52T	75K OHM +-5% 1/4W
R416	61A	210-	183 -	52T	18K OHM +-1% 1/6W
R417	95A	90-	23		TIN COATED
R418	61A	210-	183 -	52T	18K OHM +-1% 1/6W
R420	61A	172-	472 -	52T	4.7K OHM +-5% 1/4W
R421	61A	172-	222 -	52T	2.2K OHM +-5% 1/4W
R422	61A	602-	101 -	52T	100 OHM +-5% 1/6W
R423	61A	602-	203 -	52T	20K OHM +-5% 1/6W
R425	61A	172-	221 -	52T	220 OHM +-5% 1/4W
R427	61A	175L-	220 -	52T	22 OHM +-5% 1/2W
R429	61A	175L-	100 -	52T	10 OHM +-5% 1/2W
R430	61A	172-	154 -	52T	150K OHM +-5% 1/4W
R431	95A	90-	23		TIN COATED
R433	61A	602-	222 -	52T	2.2K OHM +-5% 1/6W
R434	61A	602-	392 -	52T	3.9K OHM +-5% 1/6W
R435	61A	172-	122 -	52T	1.2K OHM +-5% 1/4W
R436	61A	602-	821 -	52T	820 OHM +-5% 1/6W
R440	61A	602-	562 -	52T	5.6KOHM +-5% 1/6W
R441	61A	175L-	913 -	52T	91K OHM +-5% 1/2W
R447	61A	172-	473 -	52T	47K OHM +-5% 1/4W
R448	61A	172-	202 -	52T	2K OHM +-5% 1/4W
R449	61A	172-	472 -	52T	4.7K OHM +-5% 1/4W
R450	61A	602-	563 -	52T	56K OHM +-5% 1/6W
R462	61A	602-	243 -	52T	24K OHM +-5% 1/6W
R470	61A	602-	133 -	52T	13K OHM +-5% 1/6W
R490	61A	210-	513 -	52T	51K OHM +-1% 1/6W
R497	61A	602-	561 -	52T	560K OHM +-5% 1/6W
R502	61A	210-	363 -	52T	36K OHM +-1% 1/6W
R503	61A	210-	303 -	52T	30K OHM +-1% 1/6W
R504	61A	602-	103 -	52T	10K OHM +-5% 1/6W
R505	61A	210-	363 -	52T	36K OHM +-1% 1/6W
R506	61A	210-	303 -	52T	30K OHM +-1% 1/6W
R507	61A	602-	103 -	52T	10K OHM +-5% 1/6W
R508	61A	210-	302 -	52T	3K OHM +-1% 1/6W
R520	95A	90-	23		TIN COATED
R601	61A	172-	243 -	52T	24K OHM +-5% 1/4W
R602	61A	172-	392 -	52T	3.9K OHM +-5% 1/4W
R603	61A	172-	123 -	52T	12K OHM +-5% 1/4W
R604	61A	172-	562 -	52T	5.6K OHM +-5% 1/4W
R605	61A	175L-	159 -	52T	1.5 OHM +-5% 1/2W
R606	61A	175L-	271 -	52T	270 OHM +-5% 1/2W
R609	61A	172-	564 -	52T	560K OHM +-5% 1/4W
R610	61A	172-	124 -	52T	120K OHM +-5% 1/4W
R611	61A	172-	563 -	52T	56K OHM +-5% 1/4W
R612	61A	172-	222 -	52T	2.2K OHM +-5% 1/4W
R613	61A	172-	102 -	52T	1K OHM +-5% 1/4W
R614	61A	172-	243 -	52T	24K OHM +-5% 1/4W
R707	61A	602-	472 -	52T	4.7K OHM +-5% 1/6W
R708	61A	602-	103 -	52T	10K OHM +-5% 1/6W
R709	61A	602-	103 -	52T	10K OHM +-5% 1/6W
R710	61A	602-	103 -	52T	10K OHM +-5% 1/6W
R711	61A	602-	103 -	52T	10K OHM +-5% 1/6W
R712	61A	602-	273 -	52T	27K OHM +-5% 1/6W
R713	61A	602-	562 -	52T	5.6K OHM +-5% 1/6W
R715	61A	602-	103 -	52T	10K OHM +-5% 1/6W
R720	61A	172-	104 -	52T	100K OHM +-5% 1/4W
R721	61A	175L-	102 -	52T	1K OHM +-5% 1/2W
R722	61A	602-	332 -	52T	3.3K OHM +-5% 1/6W



LOCATION

CMP356PAI

SPECIFICATION

R724	61A	172-	105 -	52T	1MEG OHM +-5% 1/4W
R725	61A	204-	154 -	52T	150K OHM +-5% 1/2W
R726	61A	602-	102 -	52T	1K OHM +-5% 1/6W
R727	61A	175L-	823 -	52T	82K OHM +-5% 1/2W
R728	61A	172-	561 -	52T	560 OHM +-5% 1/4W
R729	61A	602-	470 -	52T	47 OHM +-5% 1/6W
R730	95A	90-	23		TIN COATED
R750	61A	204-	124 -	52T	120K OHM +-5% 1/2W
R901	61A	175L-	474 -	52T	470K OHM +-5% 1/2W
R922	61A	172-	273 -	52T	27K OHM +-5% 1/4W
R923	61A	172-	474 -	52T	470K OHM +-5% 1/4W
R924	61A	172-	474 -	52T	470K OHM +-5% 1/4W
R925	61A	172-	243 -	52T	24K OHM +-5% 1/4W
R926	61A	172-	183 -	52T	18K OHM +-5% 1/4W
R930	61A	172-	202 -	52T	2K OHM +-5% 1/4W
R931	61A	200-	109 -	52T	1 OHM +-1% 1/4W
R932	61A	172-	222 -	52T	2.2K OHM +-5% 1/4W
R933	61A	172-	361 -	52T	360 OHM +-5% 1/4W
R934	61A	172-	102 -	52T	1K OHM +-5% 1/4W
R935	61A	172-	334 -	52T	330K OHM +-5% 1/4W
R937	61A	172-	151 -	52T	150 OHM +-5% 1/4W
R938	61A	172-	220 -	52T	22 OHM +-5% 1/4W
R939	61A	172-	203 -	52T	20K OHM +-5% 1/4W
R940	61A	171-	393 -	52T	39K OHM +-2% 1/4W
R941	61A	172-	152 -	52T	1.5K OHM +-5% 1/4W
R942	61A	172-	680 -	52T	68 OHM +-5% 1/4W
R951	61A	172-	100 -	52T	10 OHM +-1% 1/4W
R952	61A	172-	473 -	52T	47K OHM +-1% 1/4W
R953	61A	172-	303 -	52T	30K OHM +-5% 1/4W
R956	61A	172-	122 -	52T	1.2K OHM +-5% 1/4W
R957	61A	172-	473 -	52T	47K OHM +-5% 1/4W
R958	61A	172-	102 -	52T	1K OHM +-5% 1/4W
R959	61A	172-	333 -	52T	33K OHM +-5% 1/4W
R960	61A	172-	473 -	52T	47K OHM +-5% 1/4W
R962	61A	172-	220 -	52T	22 OHM +-5% 1/4W
R963	61A	175L	681 -	52T	680 OHM +-5% 1/2W
R966	61A	172-	302 -	52T	3K OHM +-5% 1/4W
R967	61A	172-	132 -	52T	1.3K OHM +-5% 1/4W
R968	61A	172-	244 -	52T	240K OHM +-5% 1/4W
R969	61A	172-	753 -	52T	75K OHM +-5% 1/4W
R972	61A	172-	183 -	52T	18K OHM +-5% 1/4W
R977	61A	175L	154 -	52T	150K OHM +-5% 1/2W
R980	61A	172-	221 -	52T	220 OHM +-5% 1/4W
R986	61A	172-	106 -	52T	10MEG OHM +-5% 1/4W
R988	61A	172-	223 -	52T	22K OHM +-5% 1/4W
R995	61A	602-	393 -	52T	39 OHM +-5% 1/6W
R996	61A	602-	103 -	52T	10K OHM +-5% 1/6W
ZD108	95A	90-	23		TIN COATED
ZD110	93A	39-	73 -	52T	ZENER 5.6V
ZD403	93A	39-	54 -	52T	12.7V DIODE 1/2W
ZD404	95A	90-	23		TIN COATED
ZD420	93A	39-	522 -	52T	TZX20B
ZD701	93A	39-	518 -	52T	TZX8V2A
ZD702	93A	39-	515 -	52T	TZX3VDC
ZD902	93A	39-	55T -	52T	0.5W ZD BZX55C30
ZD903	93A	39-	124 -	52T	ZD 18-2

PARTS LIST OF CRT PC BOARD

LOCATION	CRPC356P				SPECIFICATION
	87A	3503-	500		CRT SOCKET
	40A	581-	26 -	605	LABEL
	705A	556P-	R56 -	01	IC802 ASS'Y
C812	67A	305-	102 -	3	1000uF +-20% 16V
C835	65A	2Z-	103 -	4B	0.01UF +80% -20% 2K Z5V
C836	65A	1K-	221 -	5A	220PF +-10% Y5P 1KV
C837	67A	305-	470 -	10	47uF +-20% 160V
C861	65A	517M-	103 -	3A	0.01uF/500V +-20% Z5U
IC801	56A	539-	2		LM1279N
P801	33A	3278-	11A		11P PLUG B11B-XHA/JS
P802	33A	3278-	9		9P PLUG
P803	33A	3278-	6		6P PLUG
R807	61A	208-	390 -	64	39 OHM +-5% 1W
R859	61A	152M-	101 -	64	100 OHM 5% 2W
VR801	75A	334-	222		2.2K OHM 30%
VR802	75A	334-	222		2.2K OHM 30%
VR803	75A	334-	303		30K OHM 30%
VR804	75A	334-	303		30K OHM 30%
VR805	75A	334-	303		30K OHM 30%

PARTS LIST OF CRT AUTO INS. PC BOARD

LOCATION	CRP356PAI				SPECIFICATION
	715A	694-	B		CRT BOARD
C801	67A	305-	100 -	7T	10uF +-20% 50V
C802	67A	305-	100 -	7T	10uF +-20% 50V
C803	67A	305-	100 -	7T	10uF +-20% 50V
C804	65A	450-	104 -	7T	0.1uF +80% -20% Y5V 50V
C805	65A	450-	104 -	7T	0.1uF +80% -20% Y5V 50V
C806	65A	450-	104 -	7T	0.1uF +80% -20% Y5V 50V
C807	67A	309-	100 -	7T	10uF +-20% 50V
C808	67A	309-	470 -	3T	47uF +-20% 16V
C809	65A	450-	104 -	7T	0.1uF +80% -20% Y5V 50V
C810	67A	305-	470 -	7T	47uF +-20% 50V
C811	65A	450-	104 -	7T	0.1uF +80% -20% Y5V 50V
C813	65A	450-	104 -	7T	0.1uF +80% -20% Y5V 50V
C814	65A	450-	104 -	7T	0.1uF +80% -20% Y5V 50V
C815	65A	450-	104 -	7T	0.1uF +80% -20% Y5V 50V
C816	65A	450-	104 -	7T	0.1uF +80% -20% Y5V 50V
C818	67A	305-	470 -	7T	47uF +-20% 50V
C819	65A	450-	104 -	7T	0.1uF +80% -20% Y5V 50V
C820	64A	44J-	104 -	1AT	0.1uF +-5% 100V
C828	67A	70-	478 -	9T	0.47Uf 100V NP
C829	67A	70-	478 -	9T	0.47Uf 100V NP
C830	67A	70-	478 -	9T	0.47Uf 100V NP
C831	64A	44J-	104 -	1AT	0.1uF +-5% 100V
C832	64A	44J-	104 -	1AT	0.1uF +-5% 100V
C833	64A	44J-	104 -	1AT	0.1uF +-5% 100V
C834	64A	46J-	104 -	1AT	0.1uF +-5% 100V
C838	65A	444-	102 -	13T	1000PF +-10% Z5P 50V
C840	65A	517K-	102 -	3T	1000PF +-10% Z5U 500V
C841	65A	517K-	102 -	3T	1000PF +-10% Z5U 500V
C842	65A	517K-	102 -	3T	1000PF +-10% Z5U 500V

LOCATION	CRP356PAI				SPECIFICATION
D801	93A	64-	11H -	52T	DIODE IN4148
D802	93A	64-	11H -	52T	DIODE IN4148
D803	93A	64-	11H -	52T	DIODE IN4148
D804	93A	64-	11H -	52T	DIODE IN4148
D805	93A	64-	11H -	52T	DIODE IN4148
D806	93A	64-	11H -	52T	DIODE IN4148
D807	93A	64-	11H -	52T	DIODE IN4148
D808	93A	64-	19G -	52T	FAST RECOVERY DIODE
D809	93A	64-	19G -	52T	FAST RECOVERY DIODE
D810	93A	64-	19G -	52T	FAST RECOVERY DIODE
D811	93A	64-	19G -	52T	FAST RECOVERY DIODE
D812	93A	64-	19G -	52T	FAST RECOVERY DIODE
D813	93A	64-	19G -	52T	FAST RECOVERY DIODE
D814	93A	64-	19G -	52T	FAST RECOVERY DIODE
D815	93A	64-	19G -	52T	FAST RECOVERY DIODE
D816	93A	64-	19G -	52T	FAST RECOVERY DIODE
D817	93A	52-	1T -	52T	1A 600V IN4005
FB801	95A	90-	23		TIN COATED
FB802	95A	90-	23		TIN COATED
FB803	95A	90-	23		TIN COATED
J801	95A	90-	23		TIN COATED
J802	95A	90-	23		TIN COATED
J803	95A	90-	23		TIN COATED
J804	95A	90-	23		TIN COATED
J805	95A	90-	23		TIN COATED
J806	95A	90-	23		TIN COATED
J807	95A	90-	23		TIN COATED
J808	95A	90-	23		TIN COATED
J809	95A	90-	23		TIN COATED
J810	95A	90-	23		TIN COATED
L801	73A	54-	479 -	5T	PEAKING COIL 4.7uF 5%
L805	73A	54-	478 -	10T	PEAKING COIL
L806	73A	54-	478 -	10T	PEAKING COIL
L807	73A	54-	478 -	10T	PEAKING COIL
L808	73A	54-	479 -	5T	PEAKING COIL 4.7uF 5%
Q813	57A	419-	SG -	T	TR. KSC945GC
Q814	57A	742-	1 -	T	TR. 2SC1730
R801	61A	602-	750 -	52T	75 OHM +-5% 1/6W
R802	61A	602-	750 -	52T	75 OHM +-5% 1/6W
R803	61A	602-	750 -	52T	75 OHM +-5% 1/6W
R804	61A	602-	300 -	52T	30 OHM +-5% 1/6W
R805	61A	602-	300 -	52T	30 OHM +-5% 1/6W
R806	61A	602-	300 -	52T	30 OHM +-5% 1/6W
R808	61A	602-	103 -	52T	10K OHM +-5% 1/6W
R809	61A	172-	225 -	52T	2.2MEG OHM +-5% 1/4W
R810	61A	602-	101 -	52T	100 OHM +-5% 1/6W
R811	61A	602-	332 -	52T	3.3K OHM +-5% 1/6W
R812	61A	602-	132 -	52T	1.3K OHM +-5% 1/6W
R813	61A	602-	332 -	52T	3.3K OHM +-5% 1/6W
R814	61A	602-	332 -	52T	3.3K OHM +-5% 1/6W
R815	61A	602-	391 -	52T	390 OHM +-5% 1/6W
R816	61A	602-	391 -	52T	390 OHM +-5% 1/6W
R817	61A	602-	391 -	52T	390 OHM +-5% 1/6W
R818	61A	602-	100 -	52T	10 OHM +-5% 1/6W
R819	61A	602-	100 -	52T	10 OHM +-5% 1/6W
R820	61A	602-	100 -	52T	10 OHM +-5% 1/6W
R821	95A	90-	23		TIN COATED
R823	61A	602-	910 -	52T	91 OHM +-5% 1/6W
R824	61A	602-	910 -	52T	91 OHM +-5% 1/6W
R825	61A	602-	910 -	52T	91 OHM +-5% 1/6W
R826	95A	90-	23		TIN COATED
R840	61A	172-	102 -	52T	1K OHM +-5% 1/4W
R841	61A	172-	102 -	52T	1K OHM +-5% 1/4W
R842	61A	172-	102 -	52T	1K OHM +-5% 1/4W
R846	61A	602-	393 -	52T	39K OHM +-5% 1/6W

LOCATION	CRP356PAI				SPECIFICATION
R847	61A	602-	393 -	52T	39K OHM +-5% 1/6W
R848	61A	602-	393 -	52T	39K OHM +-5% 1/6W
R849	61A	172-	105 -	52T	1MEG OHM +-5% 1/4W
R850	61A	172-	105 -	52T	1MEG OHM +-5% 1/4W
R851	61A	172-	105 -	52T	1MEG OHM +-5% 1/4W
R855	61A	175L-	560 -	52T	56 OHM +-5% 1/2W
R856	61A	175L-	560 -	52T	56 OHM +-5% 1/2W
R857	61A	175L-	560 -	52T	56 OHM +-5% 1/2W
R858	95A	90-	23		TIN COATED
R860	61A	172-	104 -	52T	100K OHM +-5% 1/4W
R861	61A	602-	822 -	52T	8.2 OHM +-5% 1/6W
R862	61A	602-	222 -	52T	2.2 OHM +-5% 1/6W
R863	95A	90-	23		TIN COATED
R864	61A	175L-	471 -	52T	470 OHM +-5% 1/2W
ZD801	93A	39-	519 -	52T	TZX8V2B

PARTS LIST OF IC802 ASS'Y

LOCATION	PARTS No.				SPECIFICATION
IC802	90A	355-	2		HEAT SINK
	M1A	1730-	8 -	128	SCREW
	56A	551-	3		LM2439
	73A	54-	109 -	5T	1UH
	73A	54-	109 -	5T	1UH
L809	73A	54-	109 -	5T	1UH
L810	73A	54-	109 -	5T	1UH
L811	73A	54-	109 -	5T	1UH

PARTS LIST OF Q901 ASS'Y

LOCATION	PARTS No.				SPECIFICATION
Q901	5A	42-	1		NYLON WASHER
	12A	372-	1		SILICONE RUBBER
	90A	339-	2		HEAT SINK
	M1A	1730-	10 -	128	SCREW
	57A	667-	7		IRFBC40 I.R. MOSFET



PARTS LIST OF Q911 ASS'Y

LOCATION	PARTS	No.		SPECIFICATION
Q911	5A	42-	1	NYLON WASHER
	12A	372-	1	SILICONE RUBBER
	90A	315-	1	HEAT SINK
	M1A	1730-	8 -	SCREW
	57A	600-	504	MOS FET IRF634A
			128	

PARTS LIST OF IC601 ASS'Y

LOCATION	PARTS	No.			SPECIFICATION
IC601	12A	372-	1	128	SILICONE RUBBER
	90A	348-	3		HEAT SINK
	M1A	1730-	10 -		SCREW
	5A	42-	1		WASHER
	56A	574-	1		TDA9302H

PARTS LIST OF AC LINET ASS'Y

LOCATION	PARTS	No.			SPECIFICATION
CN901	87A	501-	5		RECEPTACLES 0714
	96A	29-	6 -	190	H.S. TUBING
	95A	205S-	354 -	043	WIRE

PARTS LIST OF Q403/Q406/D408 ASS'Y

LOCATION	PARTS	No.		SPECIFICATION	
D408 Q403 Q406	5A	42-	1	NYLON WASHER	
	32A	3028-	8	RUBBER	
	90A	354-	503	HEAT SINK	
	M1A	1730-	8 -	128	SCREW
	M1A	1730-	10 -	128	SCREW
	93A	220-	11 -	F	DMV32B
	57A	689-	6		2SC52967
	57A	415-	3		TR. 2SD2025

PARTS LIST OF IC904 ASS'Y

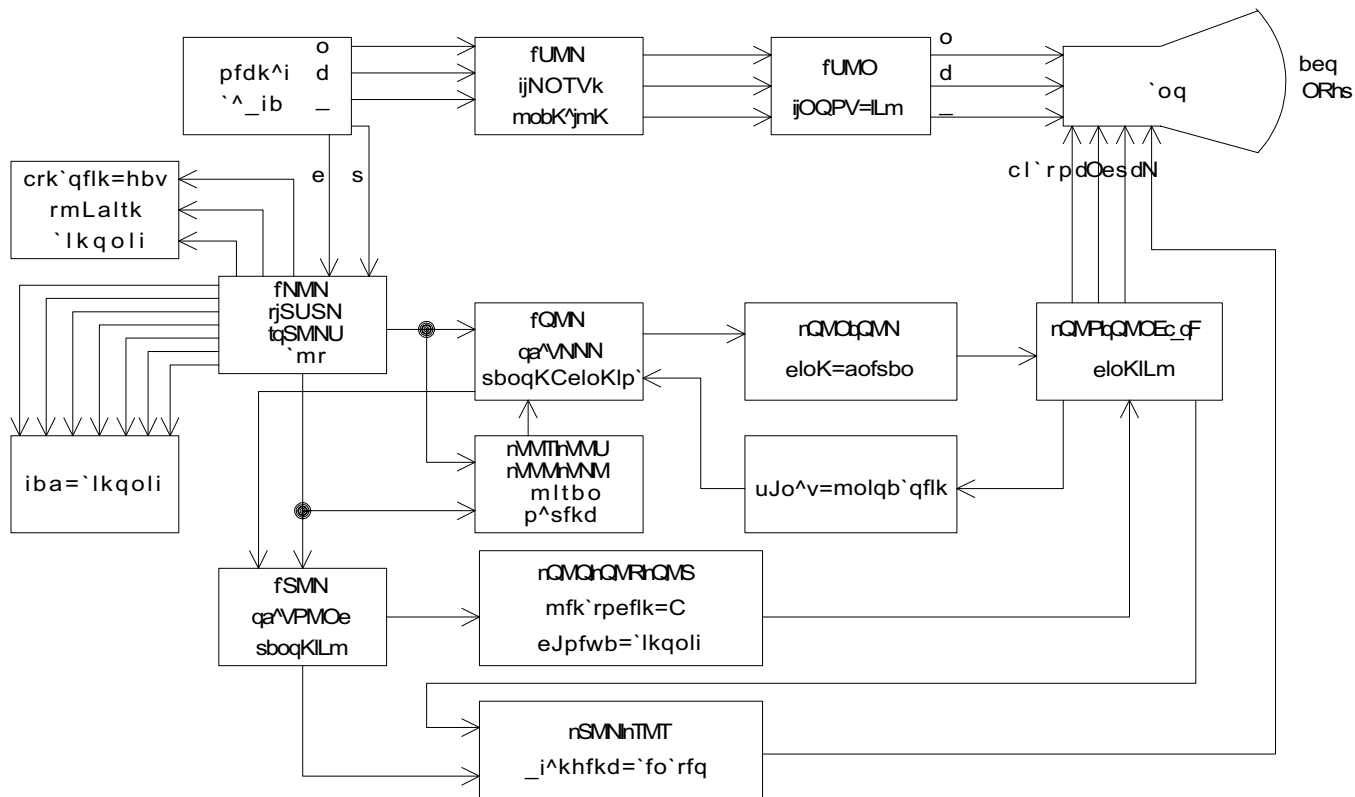
LOCATION	PARTS	No.	SPECIFICATION
IC904	90A	315- 1	HEAT SINK
	M1A	1730- 6 - 128	SCREW
	56A	133- 12 - STM	3 PIN 12V REG.L7812CV

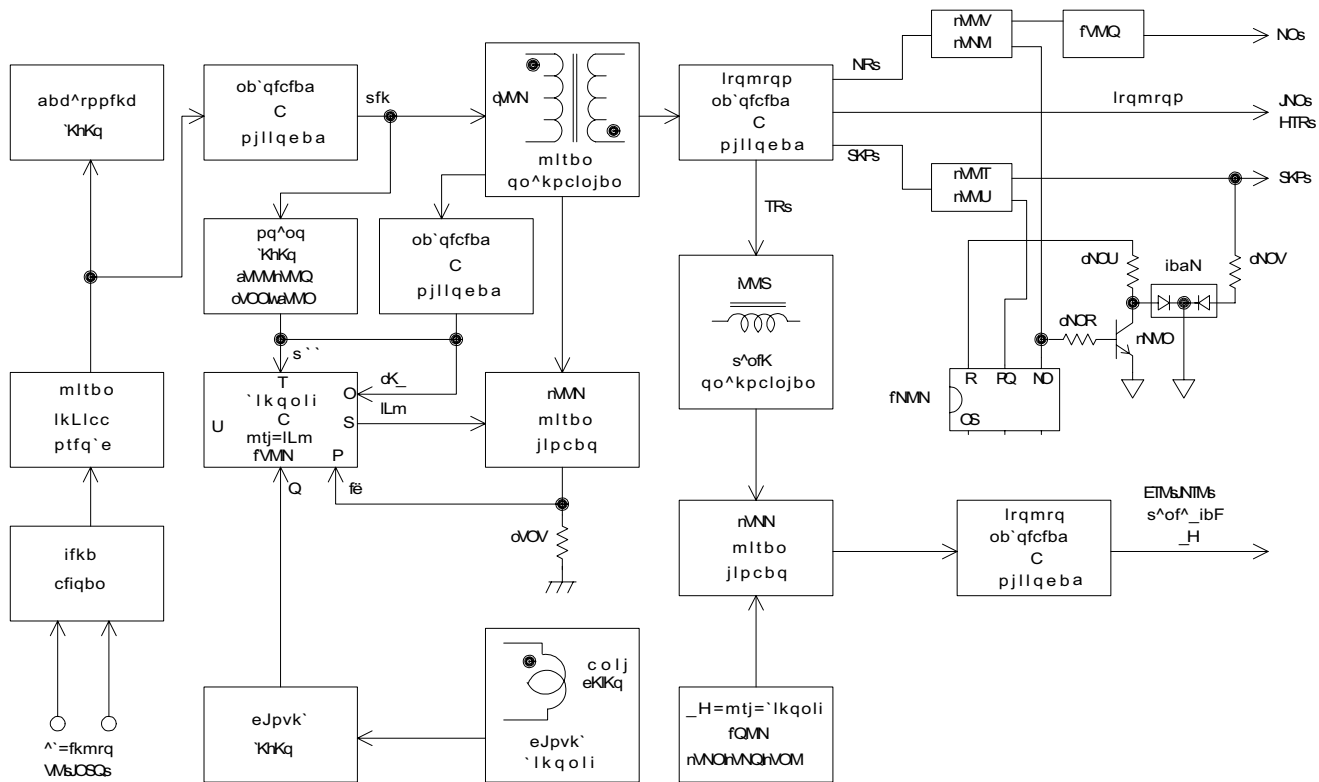
PARTS LIST OF CAB'T ASS'Y

LOCATION	PARTS	No.		SPECIFICATION
	12A	6000-	2	RUBBER FOOT
	19A	506-	3 - 1	SPRING
	33A	3686-	1	POWER BUTTON
	34A	586-	1 - AL	SWIVEL
	34A	621-	2 - AL	BASE
	34A	626-	1 - 3A	BACK COVER
	45A	76-	31 - R	BASE & SWIVEL

PARTS LIST OF SPEAKER ASS'Y

LOCATION	PARTS	No.		SPECIFICATION
	5A	38-	501	WASHER
	95A	8013-	4 - 604	WIRE & HOUSING ASS'Y
SP501	78A	216-	23 - 5C	2W 16 OHM
SP502	78A	216-	23 - 5C	2W 16 OHM





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abd^rpp N QM sJLm

_ofdeq O PV eJLm

`lkqo^pq P FU kK`

obpbq| Q PT kK`

s`` R PS kK`

dka S FR kK`

lp`M T FQ lcc=jlab

lp`N U FP eJlrq

p`i V FO sJlrq

pa^ NM FN kK`

tofqb=molqb`q NN FM jrq b

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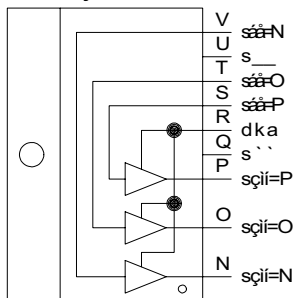
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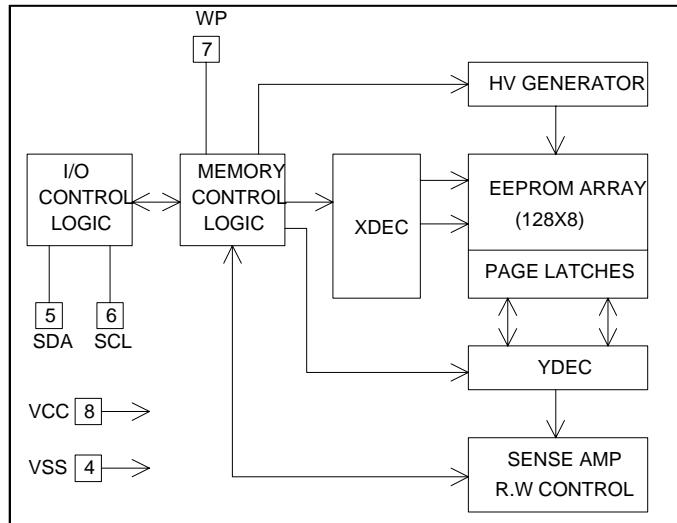
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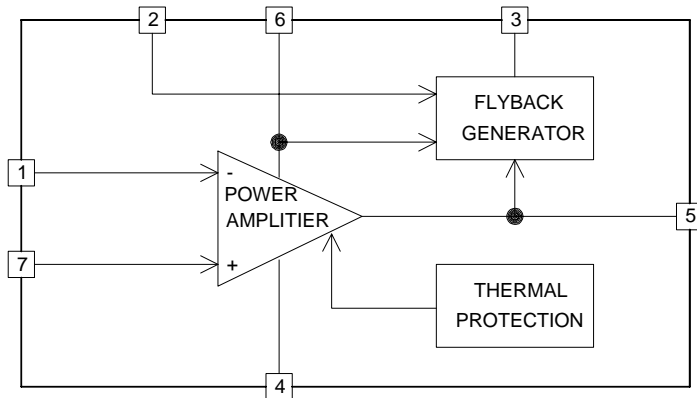
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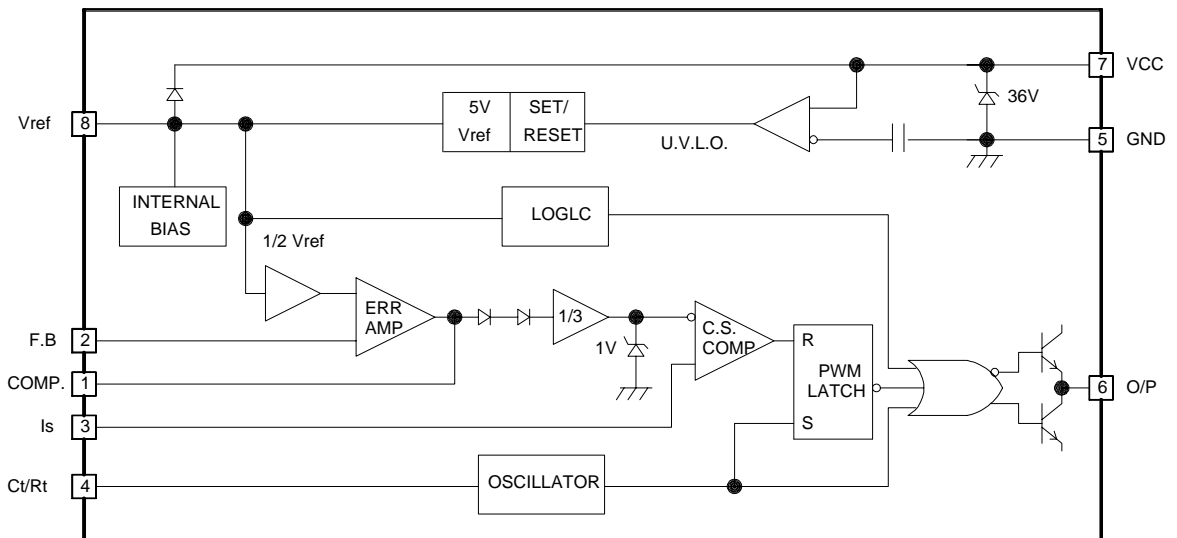
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IC601 TDA9302H



IC901 3842



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